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ABSTRACT

One of the basic principles of the Language Development Approach is that students must learn the language necessary to understand, talk, and write about all subject areas in order to succeed in school. This book contains information about teaching primary school science in the Northwest Territories with lessons that emphasize language. The goals of the unit are to (1) develop students language proficiency; (2) provide opportunities for students to use language in many different situations and for many different purposes; (3) develop student listening, speaking, reading, writing, and thinking skills including the science process skills; and (4) expand student knowledge of the science concepts related to the sun, moon, and shadows. Following a section on resources (picture and a sample activity, and related English materials--magazines, lists of children's books about bears, teacher's resources, films, etc.), lesson plans for grades one, two, and three on four topics (what is light, what makes a shadow, how do shadows change, and sun, moon, and earth) are presented. Activity ideas for science/social studies, mathematics, language arts, music/poems/stories, art, physical education/movement, and special activities are suggested. Each lesson plan contains the following segments--exercises or activities: science concepts, English vocabulary, English sentence patterns, English language concepts, special materials required, concept development/language exposure, language practice, and application. Poems, songs, and stories on this subject conclude the guide. The lessons are appropriate for students whose first language is English as well as for students who are learning English as a second language. (PR/CW)

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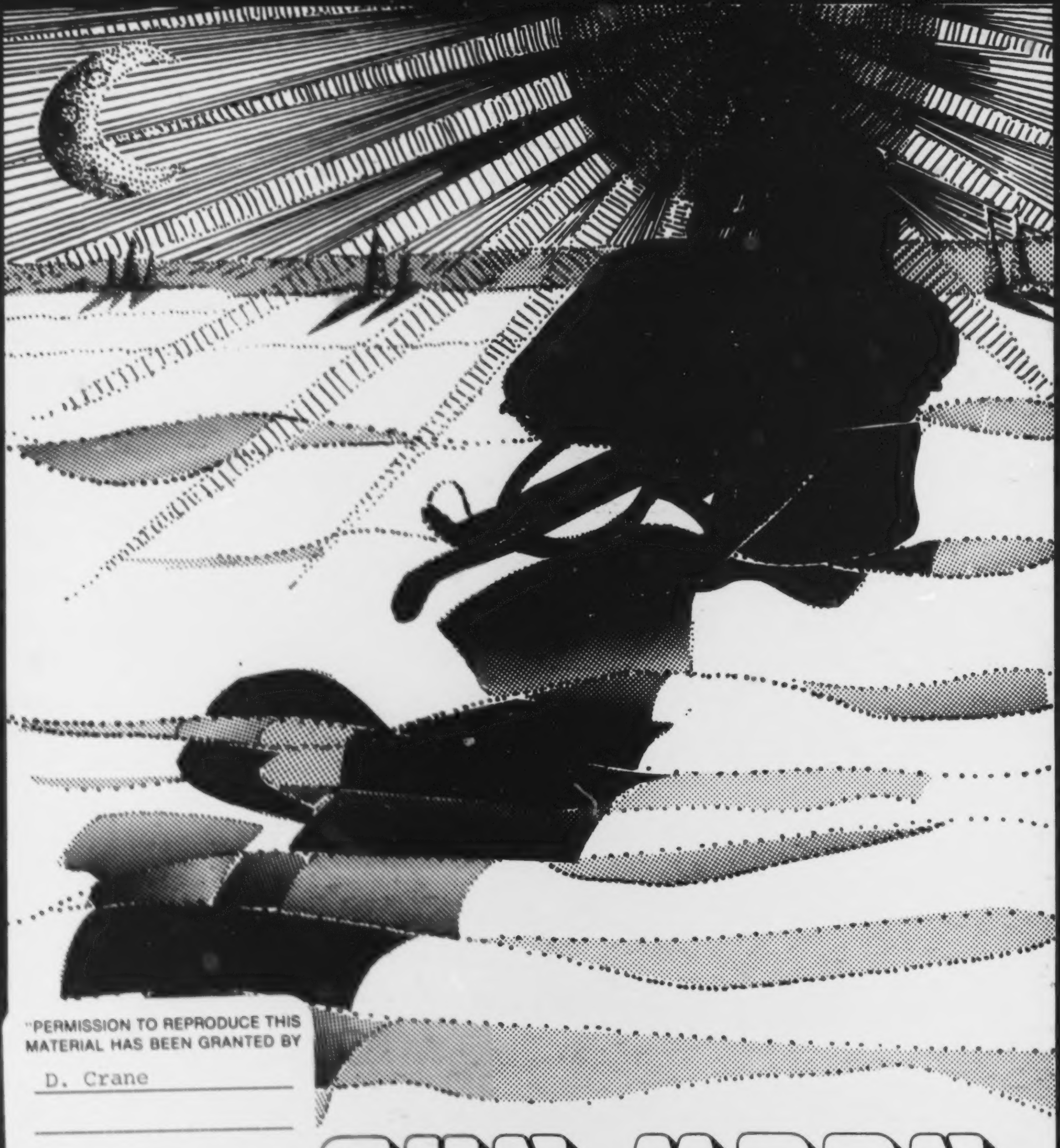

SUN MOON & SHADOWS

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Sun, Moon and Shadows

A Language Development Unit for Science
Earth, Space and Time

Grades One, Two and Three

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SCHOOL PROGRAMS
DEPARTMENT OF EDUCATION
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FOREWORD

Parents, educators, and students themselves all recognize the importance of language in the school curriculum. In order to have appropriate language programming, students need to have their experiences, skills, knowledge and, particularly, the language they bring to school identified and used as the basis for the program. Language programs should begin with and build upon these strengths. Where a child is dominant in a language other than English, he should be taught in that language. In many communities in the N.W.T., that means that the language of instruction should be Inuktitut or one of the Dene languages. Students in these communities need to gradually learn English as a second language. In instances where students speak a dialect of English upon school entry, the school's role is to respect and make use of the language the students bring. The school program should also help those students extend their English proficiency by learning the language used in varied communication situations and the language necessary for success with the academic curriculum. The aim of language instruction, where applicable and where possible, is to produce bilingual students.

Successful bilingual education requires good teaching in both languages. For many years northern educators have wrestled with the difficulties of teaching English with inappropriate commercial materials from the south. Teachers have been requesting assistance with how to most efficiently and effectively teach English as a second language/dialect. The Department of Education has determined that the Language Development Approach is the most suitable way to meet the needs of ESL/D students. The Department has developed these units for teachers to use in their classrooms. The Department therefore expects teachers to implement these units unless they can identify and justify to their Superintendent something more appropriate for their students.

Eric Colbourne

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Assistant Deputy Minister
Schools Branch

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Refining the format of and brainstorming activity ideas for the Language Development units involved the assistance of many northern educators. Members of the Teacher Committee who helped develop and pilot the original sample units included:

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LANGUAGE DEVELOPMENT/SCIENCE UNITS

SCIENCE THEME	GRADE/YEAR		
	1	2	3
LIFE AND THE ENVIRONMENT*	- - - - - - - - - LIVING/NON-LIVING THINGS - - - - - - - - -		
	Arctic/Sub-Arctic Land Animals	Birds	Marine Mammals (Whales)
	- - - - - - - - - - - - - PLANTS - - - - - - - - - - - - -		
	- - - - - - - - - - - - - POPULATIONS - - - - - - - - - - - - -		
	Bears/ Polar Bears	Dinosaurs	Fish
MATTER AND ENERGY	Popcorn	Magnets	Water
	- - - - - - ENERGY and ENERGY CONSERVATION - - - - - -		
EARTH, SPACE AND TIME **	- - - - - - - - - - **SUN, MOON AND SHADOWS** - - - - - - - - -		
	- - - - - - - - - - AIR AND AIR PRESSURE - - - - - - - - - -		

* Other animals are covered under Social Studies topics: Fall, Winter and Spring.

Moose/Caribou	Seals
Beaver/Muskrat	Other fur-bearing animals
Rabbits	

** Weather will be covered in a Science/Social Studies/Math unit.

Topic A - What Is Light?

1. Can we see without light?
2. Where does light come from?
3. Do all objects produce light?
4. How does light move?

Topic B - What Makes a Shadow

1. Can all objects cast shadows?
2. Can shadows be made by light sources and by light reflectors?

Topic C - How Do Shadows Change?

1. Where will a shadow be cast in relation to the light source and the object blocking the light?
2. How can the size, shape or sharpness of a shadow be changed?
3. How does the size of the light source affect a shadow?
4. Do multiple light sources produce multiple shadows?
5. How does the sun's position in the sky affect shadows cast by stationary objects?

GENERAL CONCEPTS / UNIT OVERVIEW

SUN, MOON AND SHADOWS

Topic D - Sun, Moon and Earth

1. What causes day and night?
2. Why does the sun appear to move across the sky?
3. Why does the moon appear to move across the sky?
4. Why does the moon appear to change shape?

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HOW TO TEACH THE SUN, MOON AND SHADOWS UNIT

How does the topic "Sun, Moon and Shadows" relate to the science program?

The Elementary Science Program (1-3 and 4-6, 1986) contains several themes which include concepts related to sun, moon and shadows. The following chart shows how the topics outlined on the General Concepts/Unit Overview sheet (see Table of Contents for page number) and the lessons in this unit relate to the concepts suggested in the program guide.

	Primary Science Guide		Unit
1.4	**Energy and Energy Conservation**		
3.	The sun's energy can be seen as light or felt as heat.	Lesson:	Light Sources
2.2	**Properties of Matter**		
1.	Objects are made of materials which have unique properties.	Lesson:	Light Reflectors
		Lesson:	Letting Light In
3.6	**Sun, Moon and Shadows**		
1.	A shadow results when an object blocks the passage of light.	Lesson:	What Makes a Shadow?
		Lesson:	My Shadow and I
2.	A light source which allows a shadow to be cast is always located in the direction opposite that of the shadow.	Lesson:	Where is the Light Source in Relation to the Shadow?
3.	The size and shape of the shadow is dependent upon the relative positions of the object, light source and receiving surface.	Lesson:	How Can You Change the Size of a Shadow?
		Lesson:	How Can You Change the Shape of a Shadow?
		Lesson:	An Object Can Cast Different Shadows
4.	Shadows can be made both by light sources and by reflected light.		
5.	The size of the light source determines the type of shadow.		
6.	Multiple light sources produce multiple shadows.	Lesson:	Shadows From Multiple Light . Sources

7. Sunlight can be blocked by clouds and objects which form shadows on the earth. Lesson: What Makes a Shadow?

8. The rotation of the earth causes day and night. Day and night are regular events. Lesson: Day and Night

9. The turning of the earth explains why the sun appears to move across the sky. Lesson: The Sun and Moon Appear to Move Across the Sky

10. The rotation of the earth causes the moon to appear to move across the sky. Lesson: The Sun and Moon Appear to Move Across the Sky

11. The moon appears to change shape during the month. Lesson: The Moon Looks Different at Different Times

Using the topic "Sun, Moon and Shadows" as an organizing theme, this unit translates the concepts from the Science program guide into a set of teaching lessons.

What part of my program is this unit?

One of the basic principles of the Language Development Approach is that students must learn the language necessary to understand, talk and write about all subject areas in order to succeed in school. Most of the material in the "Sun, Moon and Shadows" unit is related primarily to Science; it is therefore part of your Science program. The unit also contains lessons which emphasize language and concepts from other subject areas. At the beginning of each lesson is a statement which indicates which subject area that lesson emphasizes. You can teach the Literature lessons during Language Arts periods, or during Science, whichever you prefer.

What are the goals of this unit?

The goals of this unit include:

- developing students' language proficiency. The purpose is to increase their storehouse of language items and meanings (vocabulary) and to build their intuitive knowledge of structures (sentence patterns). The intent is not to have students study how the language works or to analyze it.

- providing opportunities for students to use language in many different situations and for many different purposes.

- developing students' listening, speaking, reading, writing, and thinking skills. The thinking skills developed include the scientific process skills described in the science program guide.

- expanding students' knowledge of the science concepts related to the "Sun, Moon and Shadows" topic.

What grade level is this unit?

Schools throughout the N.W.T. have different ways of organizing students into classes. There are classrooms which consist of only one grade, while others combine two or even three grades. Small schools sometimes have to put primary and intermediate students together. Regardless of the grade level(s), students in each class will have a variety of levels of proficiency in English.

It is difficult to present a unit which teachers can use easily in all these different situations. The chart which outlines Science topics for grades one to three lists this unit under each grade. You will find that the unit contains a variety of language items, sentence patterns and activity ideas. Some of the concepts and some of the language activities in the lessons are more suitable for younger/older students. This was done to accommodate the range of abilities which exist even in classes which are supposed to be one grade level and also for those teachers who have multi-grade classrooms and want to teach the same unit to the whole class.

What else do I need to know before I teach this unit?

It is important to understand the Language Development Approach which forms the basis of this unit and the Language Development Framework which forms the structure of each lesson. Please read the explanation of them which follows this section. It introduces the parts of each lesson and explains their purpose. Once you have read the description several times and have taught a few lessons you probably will not have to read it for every unit.

How long should I spend on this unit?

The length of time you spend on each lesson and on the unit as a whole will depend in part upon what your students already know about the concepts/topic and how interested they are in it. As with any unit you teach, however, the success of this unit will depend largely upon your interest in and enthusiasm about the topic. If you make the lessons stimulating to students, they will want to spend more time studying the topic.

In general, it is more important to cover a few concepts well and ensure that students incorporate the language items for those concepts into their language repertoires than to cover everything in the unit. If students begin to lose interest in the topic, wind up what you are doing and start a new unit.

Which lessons do I teach?

This unit includes a number of lessons for each grade. Please note that the grade levels indicated on each lesson are only suggestions. As the person who knows your students and their needs best, you must decide which lessons at your grade level are appropriate for your students and which are not. You may decide not to teach certain lessons because:

- students already know the concepts and the language covered
- students are not interested in that aspect of the topic
- the language is too difficult or is not appropriate
- the concepts are too difficult or are not appropriate

You may have to review or repeat lessons from earlier grades because students don't remember the material or missed the lesson when it was originally taught.

The initial assessment activities will help you identify which concepts and vocabulary students already know. You should do them with students at each grade level before teaching any of the lessons. They will help you determine which lessons you can skip and which are more appropriate for you to teach. You might also want to check the students' cumulative files and/or discuss with other teachers which topics students have already covered. It is important to keep a record of which lessons you teach so that other teachers will not repeat that material in future years.

In what order should I teach the lessons?

You can teach the lessons in the order in which they appear in the unit or you can teach them in any order you think is appropriate for your students. Generally, the Science lesson for a topic should precede (or be taught at the same time as) the Language Arts lesson for that topic. The Language Arts lesson uses poetry or literature to reinforce the concepts taught during Science.

How do I adjust these lessons to meet the particular needs of my students?

The lessons in this unit are SAMPLE lessons. They may be used in classrooms where English is the first language of students (and they are very proficient), where students speak a dialect of English, or where English is a second language for students who come to school proficient in an aboriginal language. Because of this diversity of linguistic situations it is difficult to design lessons which are equally appropriate in every classroom. These lessons provide an example of the kind of language and activities which are appropriate to teach the concepts related to the topic. You may be able to teach them exactly as they appear here. If you feel some aspect of a lesson is not appropriate for your students, however, feel free to adapt it to meet their needs. You may wish to use some of the activity ideas to make up lessons of your own and teach those instead of the ones included. Some of the most common ways in which you might need to adjust the lessons include changing the:

a) amount or type of vocabulary and/or sentence patterns in a lesson. During the initial assessment activity you may find that students have/don't have particular vocabulary items or sentence patterns. You may need to make the language in each lesson simpler or more difficult, depending upon your students' proficiency. You may want to introduce fewer or more vocabulary items or sentence patterns. Students who are more proficient need to concentrate on vocabulary; you may want to omit all sentence patterns for them.

b) number of listening and speaking activities. Students who speak little or no English or who are not familiar with a topic require extensive aural/oral practice. This is particularly true of primary ESL students. You may want to delete reading and writing activities altogether for such students and substitute more listening and speaking activities. Students who are having difficulty speaking need more listening practice; you may want to increase the emphasis on listening for them. Students who are more proficient do not need as much listening and speaking practice; they can do more reading and writing activities.

c) kinds of activities suggested for listening, speaking, reading, and writing. Your students' ages, interests, abilities, needs and language proficiency influence the kinds of activities you choose for them. Students with limited proficiency require more controlled Language Practice activities. Students who are more proficient can handle more open-ended activities. Your preferred teaching style and the materials and equipment available to you also affect your planning. You may want to change some of the activities to make them more suitable for your students. You may have to change others because you do not have the necessary resources.

d) sequence of activities suggested. Each lesson contains all three phases of the Language Development Framework: Concept Development/Language Exposure, Language Practice, and Application. It is important to include all three phases in your teaching. However, you may want to alter the sequence in which you do the activities within each phase. For example, in the Language Practice phase, listening and speaking activities always precede reading and writing activities. Usually it is important to develop aural/oral skills before introducing/developing literacy skills. However, if you have older students who are more proficient in reading and writing, you may have to combine those activities with listening and speaking to keep students interested and involved. This is not as likely for primary students; they require simple physical actions to help focus their attention and energy during listening and speaking activities.

e) content used to teach the concept in each lesson. These units have been developed for use throughout the N.W.T. in various cultural and linguistic situations. It is difficult, therefore, to be as culturally specific in the lessons as desirable. As you plan your lessons, you must be as sensitive as possible to the cultural values, experiences and lifestyles of your students. Please make the lessons as relevant to your community and your students as possible. If you think anything might be offensive to parents or students in your community please omit it or substitute more appropriate content. If in doubt, ask! LEA members, classroom assistants, and parents can provide suitable alternatives. If you are teaching any of the lessons in an aboriginal language, you probably will need to change much of the specific content in those lessons.

f) language in which you teach the lesson. If you teach in a classroom in which an aboriginal language is the language of instruction and English is taught as a second language you will want to teach some of the lessons in each language. For students who are just learning to speak English, the language in some of the lessons is too difficult. Teach those lessons in the aboriginal language.

If you teach in a classroom in which English is the language of instruction you will teach all of the lessons in English. In such situations, you might teach some lessons during your Science and Social Studies periods and others during your Language Arts periods. If your students are not very proficient in English you may want to omit some lessons altogether.

How do I group students?

These lessons have been designed so that you can teach one lesson to the whole class. You can probably do Concept Development activities with everyone in most instances. Then you can group students for Language Practice activities according to their needs and abilities. Students who require listening and speaking practice can work with the teacher, a classroom assistant, a tape recorder or a language master while other students do related reading and writing activities. In this way you can work with the whole class on the same lesson, but students can perform at their own individual skill levels.

Sometimes you may want to group students and teach each group a different lesson. You could organize these groups in two ways:

1) include students with different levels of proficiency in each group. The students who are more proficient serve as models for less proficient students. Teach each group a lesson from a different topic and have students share their work with each other.

2) include students with similar proficiency levels in each group. Teach each group a lesson using material at its level.

What kind of preparation do I need to do before teaching a lesson?

First of all, you should read over the lesson so that you are familiar with it and with the materials you require to teach the lesson.

Secondly, you should make sure you have all your materials ready, even if it means delaying the introduction of a unit or lesson for several days. This includes whatever resources you require for the Concept Development activities, as well as Language Practice materials: vocabulary cards, pictures, sentence strips, etc.

Initially it may seem as if there is a lot of preparation for each lesson, but one lesson may take several days to teach and most lessons use the same materials over and over again in different ways. Students in small groups use many of the materials from Concept Development activities during Language Practice. If you work in a school where more than one teacher is using the units, perhaps you can share the preparation work required. Older students often enjoy making things like sentence strips after school as well. Once you have made the materials for one lesson, be sure to save them for another teacher or another year! Plastic envelopes have been provided to help you keep all the materials for one unit together.

Many illustrations/worksheets that you need for the lessons have been included. **Please note however, that the illustrations in the accompanying envelope are Masters.** Please use them only to make your own copies. (You may have to adjust the size of some to make stencils or other resource materials.) When you are finished with the unit, please sequence the Masters and return them to the envelope so that other teachers will be able to find all the materials easily.

How do I schedule a lesson on my timetable?

Because the lessons emphasize language related to different subject areas, you may want to teach them during various subject periods. This means you may be working on two or three lessons at the same time, each during a different subject. Since the lessons all focus on the same theme, language and concepts emphasized during one period will reinforce those learned during another. It also means that you would be combining the normal times allocated each week for Science and Social Studies to teach this Science unit for three weeks or a month. You could then switch to a Social Studies unit for several weeks using both time periods.

As you plan, keep in mind that one lesson is not necessarily equivalent to one day's work. You will require several days to cover most lessons. You need this amount of time to make certain students internalize new language items. The chart below shows how you might teach "What Makes a Shadow?" during your Science period over a week.

Note that the Concept Development activities are spread over several days. This helps reinforce both concepts and language and gives students who miss one day's lesson other opportunities to be exposed to the material. Note also that listening and speaking activities precede reading and writing so that students are very familiar with the language orally/aurally before they work with it in print.

Key

(L) = Listening activity
(S) = Speaking activity
(R) = Reading activity
(W) = Writing activity

"WHAT MAKES A SHADOW?"

	Monday	Tuesday	Wednesday	Thursday	Friday
Concept Development	#1 #2a)	#2b) #2c)			
Language Practice		#1(L)	#2(L) #3(L/S) #4a)(S)	#4b)(S/R)	#5(R/W)
Application	#1a)	#1b)		#1c)	#2

How do I evaluate student progress in this unit?

Initial Assessment

The initial assessment activities (see Table of Contents) which you do with the students before any of the lessons will help you determine which concepts and language students already know and which they need to learn.

Ongoing Assessment

It is important to continue assessing students' success in mastering language items, skills and concepts throughout the unit. Each phase of the framework provides opportunities for assessment. During the Concept Development/Language Exposure activities you can informally assess students' understanding of new concepts through observation. Watch to see which students have difficulty matching new language items with the appropriate objects or meanings. It is important to ensure that all students understand new vocabulary and sentence patterns before starting Language Practice activities.

The nature of the Language Practice activities allows you to assess individual student performance in listening, speaking, reading and writing skills. You can decide which activity to do next based on student performance in the previous activity. Those students who have difficulty with aural/oral activities require extensive practice before doing reading and writing.

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The Application activities have been designed to give you an opportunity to determine how much of the language for that lesson students have learned. You can also determine whether students understand the language and concepts.

In addition to observing students during lesson activities, sometime during the course of the unit each student should have a personal conference with you to review work from various lessons. The one-to-one nature of this meeting allows you to determine more effectively:

1. specific weaknesses and strengths in listening, speaking, reading, writing skills,
2. comprehension of and proficiency using new language items,
3. topics and areas within a topic of particular interest to the student,
4. individual progress with the development of scientific process skills (thinking skills),
5. comprehension of science concepts included in the unit.

For the student this meeting serves as an important opportunity to articulate thoughts and feelings about the topic, share work with an interested adult, and identify future projects and directions. You can use the conference to take an in-depth look at one piece of independent reading/writing, to teach skill lessons needed to support and encourage student efforts, and to determine appropriate activities for future lessons.

Final Assessment

The culminating activities provide further informal assessment opportunities. During these activities students use all the concepts, skills and language they have learned throughout the unit. In addition, you may want to use your own assessment techniques or instruments to determine what students have learned. There are examples of simple evaluation activities at the end of each grade level.

What kind of records should I keep for this unit?

You will want to keep records for yourself of individual student's progress and mastery of skills, concepts and language. These records can be a combination of anecdotal notes based on observations, check lists, formal or informal tests, taped samples of students' speech and reading and samples of written work.

Students should also be responsible for keeping records of what they have accomplished. They can keep lists (poems they have learned, stories they have read, books they have written), journals and their own samples of speech, reading and writing.

Finally, it is also important to keep a list for the next teacher of which units you have taught and which concepts have been covered in those units. Hopefully this will prevent those groans of "We did that last year," or even worse "We've done that every year since grade one!"

You will find more detailed information on evaluation and record keeping forms in the booklet Evaluation Guidelines for use with the Science Language Development Units.

INTRODUCTION TO THE LANGUAGE DEVELOPMENT APPROACH

This unit consists of lessons which illustrate how to implement the Language Development Approach in the classroom. In order to use these lessons most effectively, it is important to be familiar with and understand:

a) the principles which form the basis of the approach, and
b) the methodological framework which provides the structure for the lessons and applies the principles to teaching practice.

The following is a brief explanation of the principles and the framework. For a more in-depth discussion of both, refer to the appropriate sections in the draft Language Development ESL/ESD guide.

PRINCIPLES

The Language Development Approach draws on elements of many approaches to teaching second languages and English language arts and integrates these to form a broad set of principles regarding language teaching. These principles include:

1. **Students need to have their experiences, skills, knowledge, and particularly, the language they bring to school identified and used as the basis for the school language program.** The program should begin with and build upon these strengths. Where children are dominant in a language other than English, they should be taught in that language. In many communities in the N.W.T., that means that the language of instruction should be Inuktitut or one of the Dene languages. Such students should gradually learn English as a second language. In instances where students speak a dialect of English upon school entry, the school's role is to respect and make use of the language the students bring, and help them learn the English used in other communication situations and which is necessary for success with the curriculum. The aim of language instruction, where applicable and where possible, is to create bilingual students.

2. **Students need to learn to articulate for themselves and to communicate their thoughts, feelings, needs, opinions and intentions for a variety of purposes in many different communication contexts. They need to be able to understand, learn from and respond to the communication of others.** This involves being able to:

   a) express and inquire about personal needs, desires, feelings;
   b) socialize;
   c) direct;
   *d) express and find out intellectual attitudes;
   *e) impart and seek factual information on past and present experiences;
   *f) reason logically;
   *g) predict;
   *h) project;
   *i) imagine.

   * Success in school depends largely upon the students' abilities to use language in these ways.

3. **ESL/ESD students need to spend more time learning to speak English than they do learning about English.** Until students have an extensive language repertoire, and can use language for a variety of purposes and in many different situations, they are not ready to analyze language. When students have developed an intuitive grasp of how English works, they can begin to study language concepts and how to apply them.

4. **Students need to learn language, but they also use language to learn.** Therefore, language should be taught across the curriculum. Whether students are learning a subject in their first language or in a second language, the development of each student's language skills is essential to achievement in the subject.

5. **Students need to learn language that is meaningful.** It is easier to accomplish this when teaching language in a context. Therefore, all teachers, in all subject areas, must attend to concept development. Without adequate concept development, the language students learn is either vague or devoid of meaning.

6. **Students need to learn to develop their thinking skills and to engage in more abstract levels of thought as they mature.** They must learn the language that allows them to express their thinking about concepts. Initially, they need

to learn concrete vocabulary and functional sentence patterns as they learn to recall, match, sequence, classify, etc., during activities. Eventually they need to learn more abstract terms and more complex sentence patterns as they grow in their ability to think more abstractly: generalizing, analyzing, imagining, predicting and evaluating.

7. **Students need to participate in language activities that integrate the language strands of listening, speaking, reading and writing.** When these strands are taught in isolation from each other in the guise of subjects such as spelling, phonics, grammar, reading, etc., student learning becomes fragmented. Students have difficulty understanding the relationships among listening, speaking, reading and writing and lose the benefit of one or more strands preparing for and/or reinforcing growth in another, e.g., discussion and brainstorming which involve listening and speaking prepare students for writing. First and second language programs should therefore integrate listening, speaking, reading and writing skills. Specific skills taught will vary with the proficiency level of the students. In the initial stages reading and writing activities should use only language which students have internalized already through aural/oral work. Strong oral proficiency is a prerequisite to learning to read.

a) Successful readers rely on three language cue systems:

- grapho-phonemic
- semantic-associational
- syntactic

The ability to use the latter two systems is a function of oral language proficiency. The greater the oral proficiency or degree of internalized language of the students in either their first or second language, the more able they are to use the latter two systems. Reading instruction should not emphasize the use of the grapho-phonemic system to the exclusion of the semantic associational and syntactic systems.

b) Successful writers also rely on three cue systems. They must possess a meaning base on which to draw, a storehouse of vocabulary representing the meaning base (semantic-associational) and an intuitive sense of how the English linguistic system works (syntactic). Mechanical skills (grapho-phonemic) are just the tools which enable students to communicate knowledge more effectively.

8. **Students need to learn "real" language and how to use it in the natural situations in which it is required.** The vocabulary items and sentence patterns used in lessons should be as similar as possible to the everyday language people actually use. Students require opportunities to practice the language by interacting with others. They will not learn to use language effectively through individual paper and pencil exercises.

Program content, classroom organization and teaching techniques used to develop concepts and language and skills should:

a) reflect all of the above, and
b) vary according to:

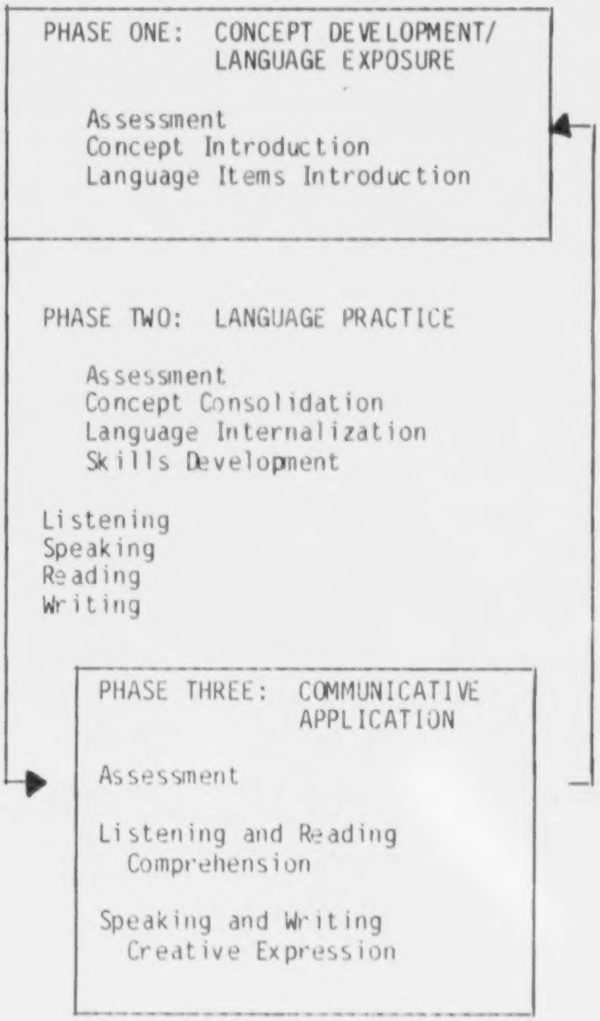
- the language proficiency of the students in the first and second language,
- cultural background (experiences, interests, and cognitive abilities),
- age/grade levels,
- type of topic,
- learning style of students,
- materials and equipment available,
- teaching style of teacher.

FRAMEWORK

The Language Development Approach uses the following framework to structure lessons involving language learning and conceptual development for all subject areas or for any topics of personal or cultural relevance and interest. The framework consists of three phases:

Phase One:	Concept Development/Language Exposure
Phase Two:	Language Practice
Phase Three:	Communicative Application

LANGUAGE DEVELOPMENT FRAMEWORK
(Based on the work of Jim MacDiarmid
Adapted by B. Pugh and C. McGregor)



PHASE ONE: CONCEPT DEVELOPMENT/ LANGUAGE EXPOSURE

- Assessment
- Concept Introduction
- Language Items Introduction

PHASE TWO: LANGUAGE PRACTICE

- Assessment
- Concept Consolidation
- Language Internalization
- Skills Development

- Listening
- Speaking
- Reading
- Writing

PHASE THREE: COMMUNICATIVE APPLICATION

Assessment

Listening and Reading Comprehension

Speaking and Writing Creative Expression

INTELLECTUAL SKILLS

- Perceiving
- Retrieving
- Recalling
- Matching
- Sequencing
- Classifying
- Comparing/Contrasting
- Generalizing
- Inferring
- Predicting
- Interpreting
- Hypothesizing
- Imagining
- Applying
- Analyzing
- Synthesizing
- Evaluating

Phase One: Concept Development/Language Exposure

At the beginning of this phase, it is important to assess what conceptual and linguistic knowledge students already possess for a topic. This assessment establishes the appropriate starting point for instruction and helps determine which concepts, experiences and language items to emphasize.

During this phase, students participate in meaningful activities or experiences through which they learn new concepts related to the topic of study. As much as possible, these activities should involve direct, firsthand, active learning with concrete materials. Where necessary, e.g., in a unit on space, indirect or analogous experiences (films, filmstrips) allow students to move beyond the confines of the immediate classroom to explore concepts associated with other times and places. These activities and experiences help students build bridges between what they already know and new concepts.

While they carry out the concept development activities, students hear and use the new language items that express the concepts. They learn to associate new vocabulary with the relevant objects or actions and to express the relationships among concepts with appropriate sentence patterns. It is essential that students learn the meaning of all new language items during this part of the lesson.

You may choose to use the students' first language during this phase when students have little or no English. You can conduct the assessment tasks in their first language to determine the extent of their conceptual knowledge. If the concepts are familiar, concentrate in ESL classes on teaching the related English language items. If the concepts are new, teach them to students in their first language and then introduce English language items. In classrooms where English is the language of instruction, have the Classroom Assistant explain difficult concepts in the students' first language to be sure they understand them.

Phase Two: Language Practice

In Phase Two, students use the new language items introduced in Phase One in a variety of activities that develop listening, speaking, reading and writing skills. Through intensive practice of items in a variety of ways, students come to "own" the new language, i.e., commit it to memory so that it becomes part of their permanent storehouse of language items. These activities also continue to strengthen the bond developed in Phase One between the new concepts and the language items that represent those concepts. While the whole class may participate in most of the Phase One activities, it is important to group students for language practice according to their language skills and needs. For students who are not proficient in English, use only language items that they are comfortable with aurally/orally in reading and writing activities.

Phase Three: Communicative Application

The final phase of the lesson sequence provides opportunities for students to use their acquired knowledge and language to communicate in a variety of situations. Students show they have understood the new concepts and can use the new language items as they interact with others. These activities involve students in listening, speaking, reading and writing to solve problems, bridge an information gap, share information, complete a task, develop an arts and crafts project, share a finished product and explore related concepts and language. While carrying out these activities, the teacher can work individually with students to assess the extent to which they have mastered the concepts and language from the lesson.

In addition to the Communicative Application activities for each lesson, there are culminating activities at the end of each unit which provide opportunities for students to use all the concepts and language they have learned throughout the unit. During these activities the teacher can meet with students to review their work and what they have learned during the unit.

Intellectual Skills

An essential component of the framework is the development of intellectual skills. Learning new concepts and language involves thinking skills. On the other hand, the ability to think abstractly involves conceptual and linguistic knowledge.

Students who lack the prerequisite basic experiential and linguistic knowledge for a topic cannot engage in activities that require them to apply or solve problems using that knowledge. In moving towards abstract levels of thinking students must:

- acquire simple and concrete concepts and the corresponding labels,
- see patterns and relationships among concepts and form progressively larger and more inclusive conceptual networks in the form of principles and generalizations,
- apply the principles and generalizations to new situations, and
- analyze, synthesize and evaluate old and new knowledge to solve problems.

In the Concept Development/Language Exposure phase, assessment activities establish whether or not students have basic building block concepts and language to engage in more abstract thinking about a topic. Subsequent activities fill gaps and/or extend the students' background. The structured nature of Language Practice activities demands less high level intellectual activity. Answers are more convergent in nature; the information readily provided or available. However, Communicative Application activities require divergent thinking. Students draw on what they already have learned during the previous two phases to bridge an information gap or solve a problem.

USING THE FRAMEWORK

The Language Development Framework:

- helps students acquire a conceptual background about a topic;
- helps students acquire language to express their knowledge about that topic;
- provides opportunities for students to use their knowledge and related language in a variety of situations and
- provides opportunities for students to engage in higher levels of thinking.

The framework forms the basis for the following lessons. Keep in mind that the the techniques and activities you use with students depend upon many factors:

- cultural background of students;
- learning style of students;
- age level of students;
- proficiency in English;
- type of topic;
- materials and equipment available, and
- preferred teaching style of teacher.

RESOURCES: INCLUDED IN THIS UNIT

Resources to accompany lessons:

The Moon Looks Different at Different Times

- moon phase pictures

Sample Activity Centre Worksheets

RESOURCES: RELATED ENGLISH MATERIALS

Children's Books

Hand Shadows to Be Thrown Upon a Wall
More Hand Shadows to Be Thrown Upon a Wall
Henry Bursill
Dover Publications, Inc., n.d.

What Makes a Shadow?
Clyde R. Bulla
Harper & Row, 1962

Mr. Wink and His Shadow
Dick Gackenback
Harper & Row, 1983

Shadows
Taro Gomi
Heian International Publishing, Inc., 1981

Shadows: Here, There and Everywhere
Ron Coor, Nancy Coor
Harper & Row, 1981

Private Zoo
Georgess McHargue
Viking Press, 1975

Pekan the Shadow
Rutherford G. Montgomery
Caxton Printers, Ltd., 1970

Light and Shadows
(Science Series)
Macdonald Educational

Where Does the Sun Go At Night?
Mirra Ginsburg
Greenwillow Books, 1981

The Day We Saw the Sun Come Up
Alice E. Goudey
Charles Scribner's Sons, 1961

Our Friend the Sun
Janet Palazzo
Troll Associates, 1982

"Joey," "Invention"
From: Where The Sidewalk Ends
Shel Silverstein
Harper & Row, 1974

"Moon-Catchin' Net"
From: A Light in the Attic
Shel Silverstein
Harper & Row, 1981

Said the Raccoon to the Moon
(A Magic Circle Book)
Miriam Morton
Ginn and Company, 1974

Wake Up, Sun! (Step Into Reading)
David L. Harrison
Random House, Inc., 1986

Papa, please get the moon for me
Eric Carle
Picture Book Studio, 1986

Energy From the Sun
Melvin Berger
Harper & Row, 1976

Shadow Book
Beatrice S. DeRegniers, Isabel Gordon
Harcourt Brace Jovanovich, n.d.

You Will Go To The Moon
Mac B. Freeman, Ira M. Freeman
Random House, Inc., 1971

Amy Goes to the Moon
Cornelia Shields
Children's Art Foundation, Inc., 1976

Maggie's Moon
Martha Alexander
Dial Books for Young Readers, 1982

Me and My Shadows
Me and More Shadows
Joy Joyce
Joy-Co Press, n.d.

The Sun is On
Lindamichelle Baron
Harlin Jacque, 1982

Why the Sun & the Moon Live in the Sky
Elphinstone Dayrell
Houghton Mifflin Co., 1977

Shine, Sun!
Carol Greene
Children's Press, 1983

Legends of the Sun and Moon
Eric Hadley, Tessa Hadley
Cambridge University Press, 1983

Shadows Across the Sun
Albert Likhanov
Harper & Row, 1983

Light
Rocco V. Feravolo
Garrard, n.d.

I Am the Sun
Joanne Marxhausen, Ben Marxhausen
Concordia Publishing House, 1979

What the Moon Saw
Brian Wildsmith
Oxford University Press, 1978

Sun & Light
Neil Ardley
Franklin Watts, Inc., 1983

Sun Fun
Caroline Arnold
Franklin Watts, Inc., 1981

Sun
Keith Brandt
Troll Associates, 1985

Sun: Our Nearest Star
Sunshine Makes the Seasons
What Makes Day & Night?
Franklin M. Branley
Harper & Row, n.d.

Sun Up, Sun Down
Gail Gibbons
Harcourt Brace Jovanovich, 1983

Mooncake
Frank Asch
Prentice-Hall, 1983

The Truth About the Moon
Clayton Bess
Houghton Mifflin Co., 1983

Who Owns the Moon?
Sonia Levitin
Houghton Mifflin Co., 1973

Moonlight
Jan Ormerod
Lothrop, Lee & Shepard Books, 1982

Goodnight Moon
Margaret Wise Brown
Harper & Row, 1947

Wait Til the Moon is Full
W.W. Brown
Harper & Row, 1948

Regards to the Man in the Moon
Ezra Jack Keats
Scholastic, Inc., 1981

See the Moon
Robert Kraus
Simon and Schuster, 1980

Dawn
Uri Shulevitz
Farrar, Strauss & Giroux, 1974

Someone is Eating the Sun
Ruth E. Sonneborn
Random House, Inc., 1974

Moon Man
Tomi Ungerer
Harper & Row, 1967

Midnight Moon
Clyde Watson
Collins, n.d.

The Moons Seems to Change
Franklin M. Branley
Thomas Y. Crowell, n.d.

Come Out Shadow, Wherever You Are
Bernice Myers
Scholastic, Inc., n.d.

My Shadow and I
Patty Wolcott
Addison Wesley, 1975

"Silverly"
From Jelly Belly
Dennis Lee
Macmillan of Canada, 1983

Science Fun with a Flashlight
Herman Scheider
McGraw-Hill, n.d.

Moon Mouse
Adelaide Hall
Random House, 1969

The Boy in the Moon
Ib Olson
Parents' Magazine Press, 1971

Angry Moon
William Selector
Boston Brown Little, 1970

Midnight Moon
Clyde Watson
Collins, 1979

Moon
Macdonald Starters
Macdonald Educational, 1971

The Man in the Moon as He Sails the Sky
Ann Schweninger
Dood Mead, 1979

The Sun is a Golden Earring
Natalia M. Belting
Holt Rinehart and Winston, 1960

Animals on the Ceiling
Richard Armour
Worlds Work, 1968

Goodnight
Russell Hoban
Worlds Work, 1969

Hildilid's Night
Cheli Duran Ryan
Collier Books, 1971

The Moon - Jack and Jill and other Legends
(A Magic Circle Book)
Franklyn M. Branley
Ginn and Company, 1972

Follow the Sunset
Herman and Nina Schneider
Doubleday and Co., 1952

A Time for Sleep
Millicent E. Selsam
William R. Scott, Inc., 1953

Why We Have Day & Night
Edward Gorey and Peter Neumeyer
Capra Press, 1982

Good Night, Night
Helen Webber
Astor-Honor, Inc., 1968

Walk When the Moon is Full
Frances Hamerstrom
Crossing Press, 1975

The White Marble
Charlotte Zolotow
Harper & Row, 1982

Light and Dark
Science is Fun Series
Ed Catherall
Wayland Publishers Ltd., 1985

What Makes the Sun Shine?
Isaac Asimov
Little, Brown & Company

"The Soccer Ball Sun"
From Pint-Sized Poetry
Good Apple Activity Book

"Moon"
From With a Deep Sea Smile
Virgina A. Tashjian
Little, Brown and Company, 1974

Teacher's Resources

Elementary Science Study (Teacher's Guides):
  Light and Shadows
  Where is the Moon?
McGraw-Hill Ryerson Limited

Science 5/13 (Teacher's Guides):
  Early Experiences
  Early Explorations
  Time
Macdonald Educational Ltd.

Addison-Wesley Science (STEM) (Level 3)
Addison Wesley Publishing Company, 1984

The Laidlaw Exploring Science Program (orange, gold, brown)
Doubleday Canada Limited, 1977

Days of Wonder (Teacher's Edition)
Imogene Forte, Joy Mackenzie
Incentive Publications, 1973

The Reasons for Seasons
Linda Allison
Little, Brown and Company

Exploring the Moon Through Binoculars and Small Telescopes
E. Cherrington
Dover Publications, 1984

Creative Science Experiences for the Young Child
Imogene Forte, Joy Mackenzie
Incentive Publications, Inc., 1978

Science Experiences for the Early Childhood Years
Jean Durgan Harlan
Chas. E. Merrill Publishing Co., 1976

Creative Sciencing Ideas and Activities for Teachers and Children
Alfred Devito, Gerald H. Hrockover
Little, Brown and Co., Boston, n.d.

Childcraft for the How and Why Library
Field Enterprises Educational Corp
  Vol. 1 - Poems and Rhymes
  Vol. 4 - World and Space
  Vol. 6 - How Things Work
  Vol. 11 - Make and Do
  Vol. 12 - Look and Learn

Creativities: A Comprehensive Guide For Teaching Art
Sandra Howardzki
Good Apple Inc.

Shadow Science
Rob Gardner and David Webster
Doubleday and Co., Inc.

Shadow Puppets: Indian Myths and Legends (Guide/Video)
Access Alberta
16930 - 114 Avenue
Edmonton, Alberta T5M 3S2

The Mount Gravatt Developmental Language Reading Program (Level 1)
Addison Wesley Publishers Ltd.
Don Mills, Ontario
  - Funny Shapes (pg. 171-176)
  - Monster Things (pg 177-182)

I Can Make a Rainbow
Marjorie Frank
Incentive Publications Inc., 1976
- "Catch a Shadow" (pg 253)

Puddles, Wings and Grapevine Swings
Imogene Forte and Marjorie Frank
Incentive Publications Inc., 1980
- Sun Time Silhouettes (pg. 138)
- Sunshine and Shadows (pg. 140-1)
- Your Own Sundial (pg. 145)

Easy Art Lessons (K-6)
Tyne Straatveit and Carolyne Z. Carl
- Shadow Picture (pg. 124)

Science In a Nutshell
Ilene Follman and Helen Jackson
Kimbo Education
- Shadows (pg. 77)

Arts Play
Leon Burton and Kathy Zursda
Addison Wesley Publ. Co.
- Shadow Creatures (pg. 16-17)

Shadow Puppets
Olive Blackham
Barrie and Rockcliff, 1960

The Complete Book of Puppetry
David Currell
Pitman Publishing, 1974

Making a Shadowgraph Show
Eric Hawksworth
Faber and Faber, 1969

Shadow Puppet Know-How
Betty Polus
Folk Puppet Theatre, 1973
(Boulder Creek, California)

Shadow Puppets, Shadow Theatre, Shadow Films
Publishers Plays Inc., 1970

Films, Filmstrips and Slides

The Earth's Moon (Wonders of Learning Kit)
National Geographic Society, 1981

Earth, Moon, Sun and Space (filmstrip/cassette)
National Geographic Society, 1985

What Makes Day, Night, and the Seasons (filmstrip/cassette)
National Geographic Society, 1983

Shadows (filmstrip)
Britannica Films

What is Light? (filmstrip)
Britannica Films

What Makes Day and Night? (film)
Young American Films, n.d.

This is the Moon (film)
McGraw-Hill

Light From the Sun (film and cassette)
Moreland/Latchford

Wind Art
Owl T.V. Program 4

Hot Air Balloons
Owl T.V. Program 6

Kites
Owl T.V. Program 8

Magazines

Pik Magazine Vol. 8, No. 1 (Department of Education Library)
Yellowknife, Northwest Territories
- "Hand Shadows" (pg. 16-17)

Miscellaneous

"Midnight Moon"
From *Movin* (record)
Hap Palmer
Educational Activities

"Lunar Phase Poster"
Celestial Products
10 W. Washington St
Middleburg, VA
U.S.A. 22117

RESOURCES: RELATED ABORIGINAL LANGUAGE MATERIALS

INITIAL ASSESSMENT ACTIVITY - Grade One

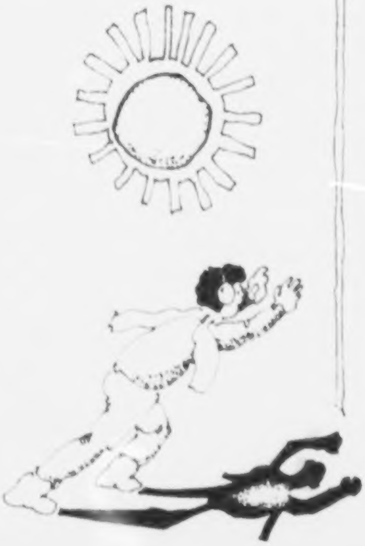
The following activities should be done before you teach any of the lessons. They will assist you to determine:

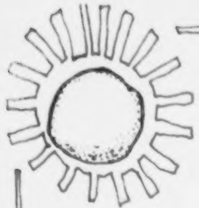
1. what students already know about the concepts of the topic and therefore where instruction should begin;
2. what interests students have in the topic and therefore the direction the unit should take; and
3. what language students already have to discuss the topic and what language they require.

One of the basic principles of the Language Development Approach and of all good teaching is that you should start with the student when planning and carrying out a unit. Before you begin to teach, it is important to assess your students' knowledge of and interest in the topic. You should determine what students already know about the topic/concepts you intend to cover. What ideas do students already have? What misconceptions do they have which you must address? What gaps are there in their knowledge which require that you teach certain lessons? What concepts do they know well enough so that you can skip the lessons which teach those concepts? What questions do they have? What relationships do they see between different aspects of the topic?

It is also important to identify what experiences students have which relate to the topic/concepts. By identifying these and building upon them in the lessons you can help students relate the new ideas and information to their own lives. It is important to do this because it assists students to internalize new concepts. It helps students make the concepts part of the conceptual framework which they use to understand and describe their world. If they do not have concrete, firsthand experiences to relate to each concept you will have to provide them wherever possible.

Another use for these activities is to help you identify particular interests of individuals, groups of students, or the whole class. You can then include activities in the lessons which involve student interests, thereby increasing motivation for them to participate and learn. You may decide to add, substitute or omit some lessons because of students' interests.

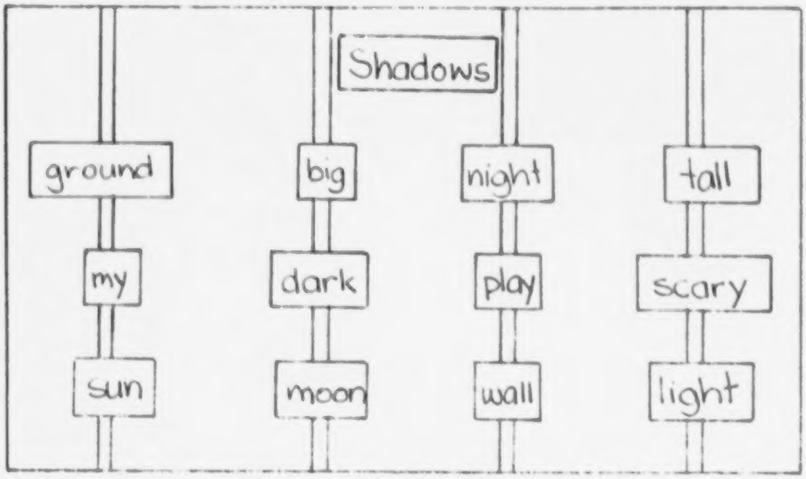


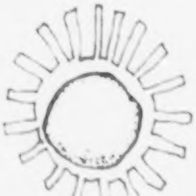


These activities will also help you determine what language students have to discuss the topic. You can find out what vocabulary items students already know and what associations they have for each word. It is important to ascertain the meanings students attach to words; sometimes their interpretations may surprise you! If they do not clearly understand terms or use them incorrectly, it will prevent them from understanding and incorporating the concept into their mental framework.

1. Brainstorming:

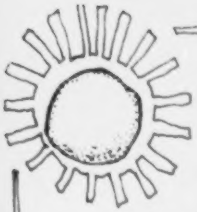
Look at pictures of shadows. Ask students to tell you words that come to mind immediately. Ask them to tell you what they know about shadows. Record their answers on cards and hang them on masking tape strips (sticky surface up) which you fasten to the wall or the chalkboard.





If students have difficulty with this activity you may wish to direct their thinking or prompt ideas by asking more specific questions.

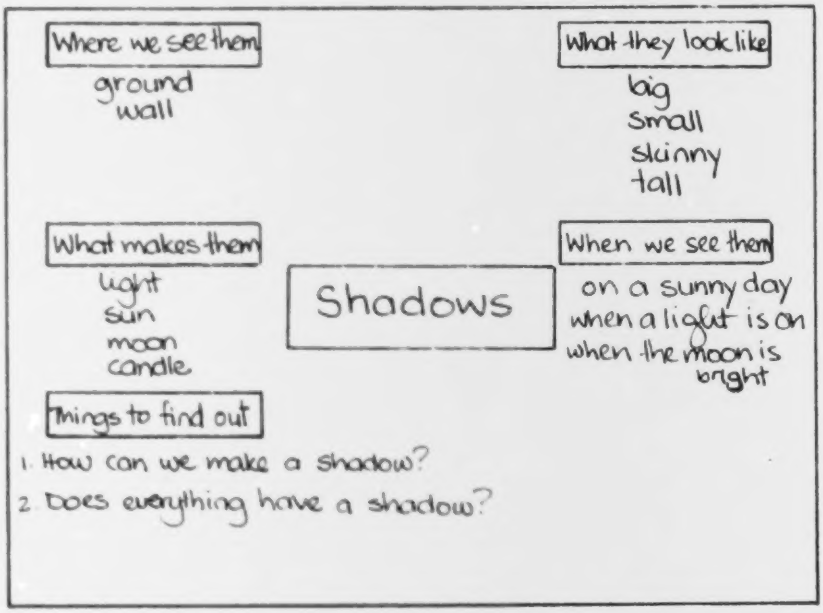
E.g., "Can there be shadows if there is no light?"
"What things give us light?"
"When do you see shadows?"
"How do they look?"



Encourage students to predict answers to these questions even if they aren't sure of the exact responses. It might be interesting to record their predictions separately and compare them to the actual answers as you study the unit. Students may think of their own questions as well. Keep a list of all the questions the class cannot answer to focus the lessons you teach during the unit.

After you record their responses on cards have students chant the words with you. Talk about the words: Which word is the most interesting? the least interesting? the most puzzling? What other word can you think of that means almost the same thing? What comes to your mind when I say _____? What do you think this word means? Etc.

Transfer the words to a flowchart to provide a permanent reference. As you teach the unit you may wish to add new information to the chart. You may also identify new questions and, hopefully, the answers. At the end of the unit you can review the chart with students. Keep it as a reference for future use.



Shadows

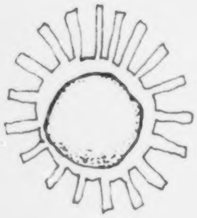
Where we see them
ground
wall

What they look like
big
small
skinny
tall

What makes them
light
sun
moon
candle

When we see them
on a sunny day
when a light is on
when the moon is bright

Things to find out
1. How can we make a shadow?
2. Does everything have a shadow?



SAMPLE QUESTIONS

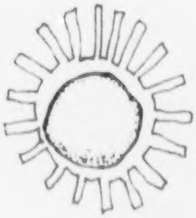
You can use these questions during the Initial Assessment activity to determine what experiences, language, and knowledge students have about the topic. You can also use the questions for assessing thinking processes throughout the Concept Development and Application phases of each lesson and during the Culminating and Evaluation activities.

QUESTIONS FOR ASSESSING EXPERIENCE:

1. Have you been in a situation where __________?
2. What do you know about __________?
3. Have you ever seen __________?
4. Have you ever experienced __________?
5. Have you ever been __________?
6. Have you ever done __________?
7. Has something like this ever happened to you?
8. When was the last time you __________?

QUESTIONS FOR ASSESSING LANGUAGE:

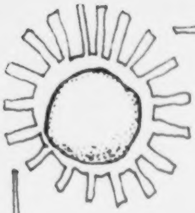
1. What do you think these words mean?
2. Can you give me another word that means __________?
3. What comes to your mind when I say __________?
4. Have you heard of the word(s) __________?
5. What words can you think of when I say the word __________?



QUESTIONS FOR ASSESSING THINKING PROCESSES:

Cognitive Memory (details, information)

1. Who . . . . ?
2. What are the facts?
3. What are the most important details?



4. What is the . . . .?
5. What do you mean by . . . .?
6. What is your interpretation of what happened? (What do you think happened?)
7. When?
8. Where?

CONVERGENT/GENERALIZING (getting the main idea)

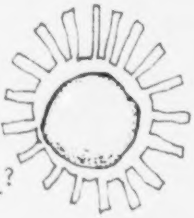
1. What are the chief points?
2. Given that information, what is the main idea?
3. What is the single, most important idea?
4. State the idea in one sentence.
5. Explain __________.

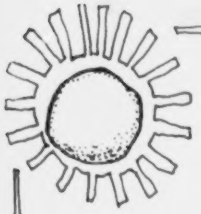
STRUCTURING/RELATING (arranging relationships)

1. Categories: Which group does that belong to?
   How would you classify . . . .?
   What type would you . . . .?
2. Comparisons: How are they alike? same? similar? identical?
3. Contrast: How is it different? in opposition to? unlike?
4. Cause and Effect: What will happen if? Why?
   What will happen as a result of?

DIVERGENT/USING/APPLYING

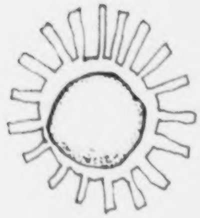
1. What might happen if?
2. If you use that idea, what would it mean for __________?
3. Apply that idea to our (this) situation.
4. What would result if __________?
5. If you were given these facts, what would you do to __________?
6. How would it be different if we used this idea?
7. What could the advantages/benefits be if we applied this idea/process?
8. What do you think the (story/paragraph) will be about?

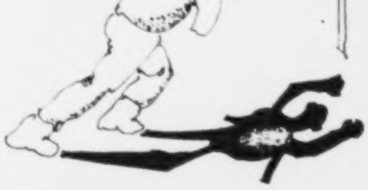


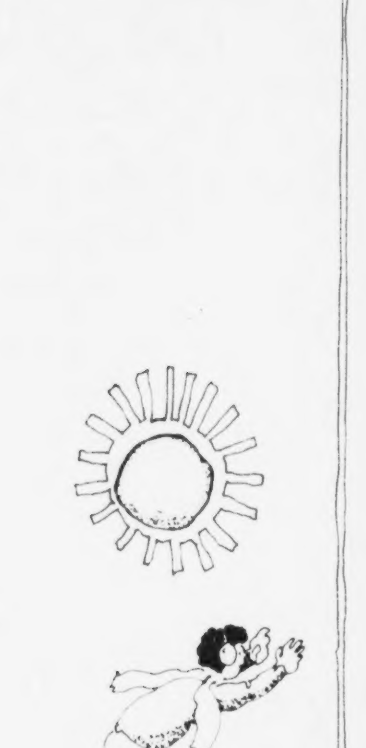


EVALUATION/JUDGING/VALUING

1. How do you feel about this idea?
2. What is your opinion?
3. What is the best __________?
4. Are you satisfied with that answer/plan?
5. Can this statement be made? Why?
6. Out of all the information, what can be used to prove your point?
7. How would you judge?
8. What is your opinion or conclusion about the product/plan/idea?
9. Why did you think it worked/didn't work?
10. What is fact? What is opinion?







ACTIVITY IDEAS

TOPIC A: WHAT IS LIGHT?

Science/Social Studies

*1. Make a list of light sources that we use today. Experiment with some of these to find out which are brighter.
2. Hold a mirror in front of a light. Try to bounce the light off the mirror and on to the wall. Move the mirror. What happens?
3. Have students construct simple periscopes using milk cartons.

Teacher's Notes

These are possible activity ideas for this topic. They can be used in lessons you make up, as enrichment activities, or as learning centre activities. Most can be done in any language. Activities with an * are actually used in the sample lessons which follow. Spaces have been left for you to record your own activity ideas.

Math

Language Arts

1. Make a list of words describing what light can do:
   glow, blaze, shine, flash, etc.
2. Make a list of words that have "light" in them:
   flashlight, lightning, daylight, etc.
3. Look out your window on a moonlit night (or morning!). How do things look different in the moonlight than in the daylight? Write about what you see
4. List compound words that contain the word "sun":
   sunlight, sunfish, sunburn, etc.
5. Make as many words as you can from one of the compound words.
   E.g., flashlight - flash, light, ash, sit, has, fast, etc.

Music, Poems, Stories

1. "Crayons"
2. "Invention"

Art

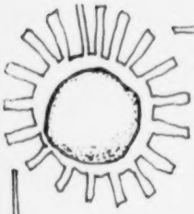
1. Make a reflecting collage using pieces of foil wrap, aluminum foil, gummed stars, sequins, glitter, etc.
2. Make reflector mobiles by cutting simple shapes from foil.

Physical Education/Movement

1. "Be My Mirror" - Students pretend they are mirrors and imitate all movements of the teacher.
2. Spot Tag: Use a mirror to reflect a "spot" of light. Try to tag someone with the "spot."

Special Activities

*1. Have students write or dictate stories about what the world would be like if there was no light. Could plants live? animals? people?



Lesson: **Light Sources** (Grade One)

As this lesson emphasizes language related to science concepts, you may wish to teach it during your Science period.

Science Concepts:

1. We cannot see without light.
2. Light comes from many sources. The sun is our natural source of light; electric lights, burning substances and chemicals are other sources of light.

English Vocabulary (*actually developed in this lesson)

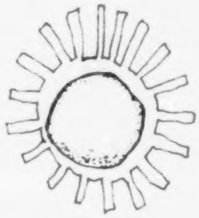
* sun
* lightbulb
* candle
* oil lamp
* match
* flashlight
* moon
* mirror
* foil pan
* make/s

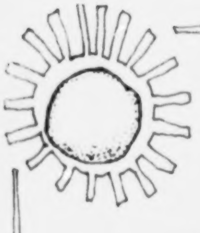
English Sentence Patterns (*actually developed in this lesson)

* Does a/the __________ make its own light?
* A/The __________ makes its own light.
* A/The __________ doesn't make its own light.
Name one thing that makes its own light.
A/The __________ makes its own light.

Special Materials Required

Shoeboxes
Small objects and pictures
Light sources
Cut and paste worksheet





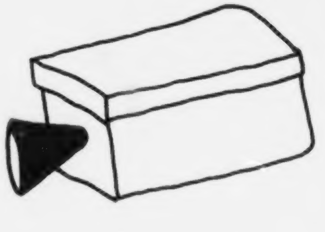
Concept Development/Language Exposure

1. Prepare several shoeboxes as shown in the illustration below. (You should have one for every group of 4-5 students.)

Tape a small object or picture inside one end of the shoebox.

Cut a small hole at the other end and put the lid on.

Roll up a piece of black paper and fit it into the hole.



Have students look into the boxes. What do they see? Why can't they see anything? Have them lift the lids of the boxes slightly and look again. What do they see now? Why can they see now? What do you need to see?

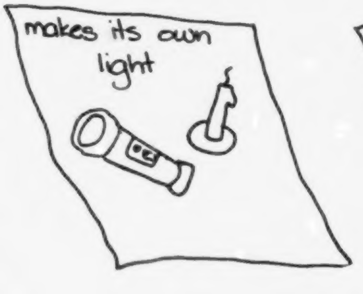
2. a) Display a variety of familiar objects:

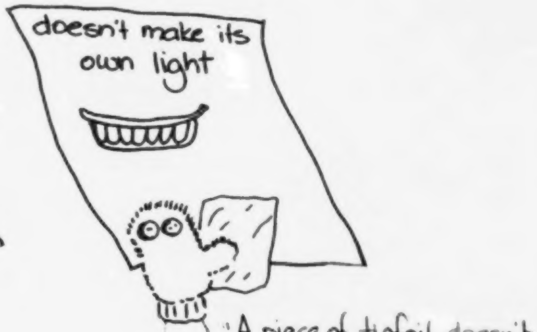
flashlight (on)	mirror
electric lamp (on)	piece of tinfoil
match (lit)	large styrofoam ball
oil lamp (lit)	foil pie pan
candle (lit)	piece of black paper

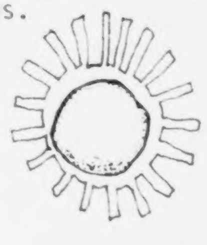
Ask students to predict which items they could see if the room was completely dark. Ask for explanations of their predictions, for example, "Why do you think you would be able to see the flashlight?" or "Why do you think you wouldn't be able to see the ball?"

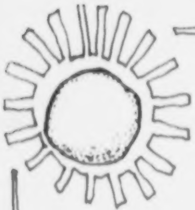
Test the predictions. Discuss the results: "Why could you see some things? Why couldn't you see some things? Do you need light to see?" Introduce the sentence patterns wherever possible.

b) Sort the items from activity #2a) into two categories. (Use two large sheets of paper labelled appropriately.) Use a puppet to help you do this so that you can model the sentence patterns.




doesn't make its own light
"A piece of tinfoil doesn't make its own light."





3. Darken the room. Pretend that there are no lights and that you have no flashlights, candles or other light sources. Tell students that there is one very important light source that you couldn't sort with the others, but which lights the classroom. Can they guess what it is? (Direct discussion to the sun.) How do we use light from the sun? What else do we get from the sun? Would we be able to live if there wasn't a sun? Why not? Have students draw pictures of what it would be like if there was no sun.

Language Practice

L 1. True and False Chairs: Place two chairs together. Label one TRUE and the other FALSE. Divide class into two teams and stand them in lines facing the chairs. Teacher makes a statement using the sentence patterns. The first player from each team races to get to the correct chair and sits down. Repeat until each team is finished.

L 2. Categorization: State a category and list examples and non-examples for that category. Students raise their hands when they hear words that don't belong. For example:

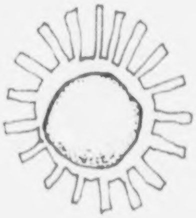
Makes its own light: sun, candle, mirror
OR
Doesn't make its own light: foil pan, sun, mirror

L/S 3. Substitution Drill: Make a statement, then provide a word for students to substitute. For example:

Teacher: "A flashlight makes its own light. Match."
Students: "A match makes its own light."

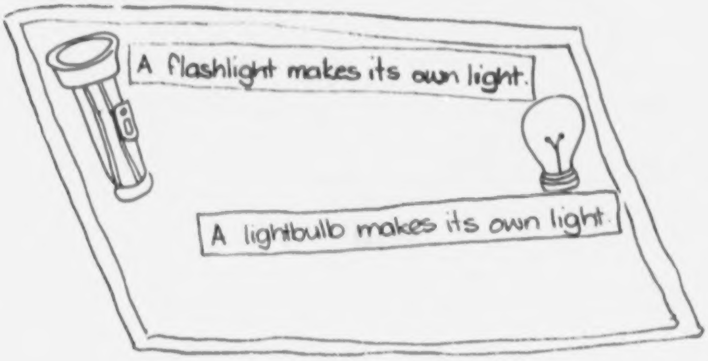
L/S 4. Repetition Drill: Make statements. Students repeat only those that are true. For example:

Teacher: "The sun makes its own light." (Students repeat.)
OR
Teacher: "A candle doesn't make its own light." (Students remain quiet.)



S 5. Flashlight Game: Darken the room. Place objects from CD#2 around the room (or use pictures of similar objects). Shine a flashlight on one of the objects. Students call out an appropriate sentence, "________ makes/doesn't make its own light."

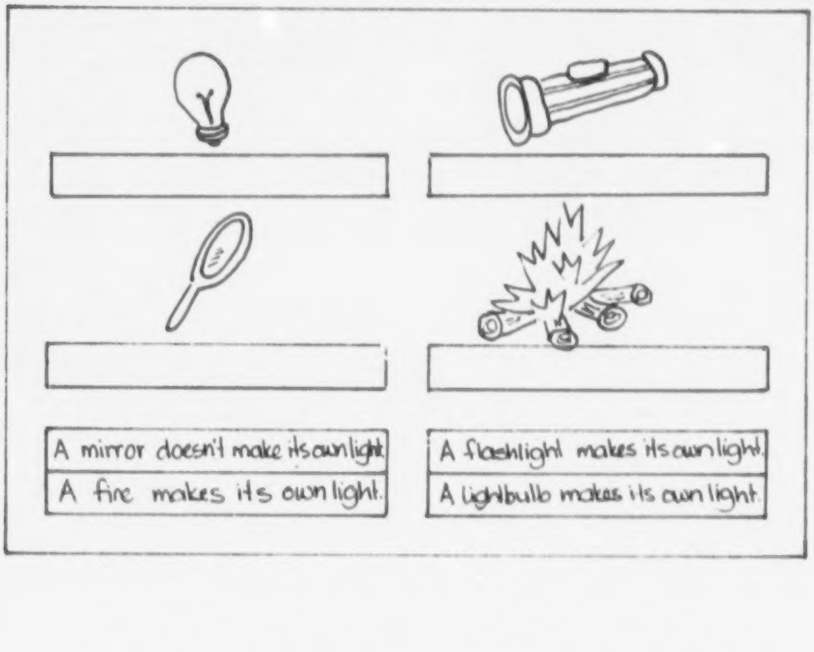
S/R 6. Bulletin Board: Have students draw large pictures of the items from CD#2 and cut them out. Have each student dictate a statement about his/her picture. Record the statements on sentence strips. Use the cut-outs and sentence strips to make a bulletin board.



A flashlight makes its own light.

A lightbulb makes its own light.

R 7. Worksheet: Make a cut and paste worksheet as shown. Students cut out sentences and match them to the appropriate pictures. They can make these into little booklets.

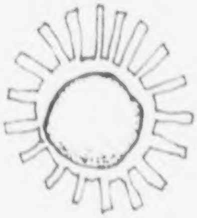


A mirror doesn't make its own light.

A flashlight makes its own light.

A fire makes its own light.

A lightbulb makes its own light.



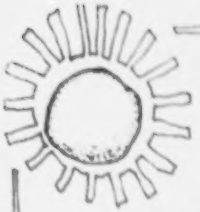
Application

1. Make a list of all the light sources we use. Have students interview elders to find out what light sources they used when they were young. Record these on another list. Compare the lists. How are they the same? How are they different?

2. Discuss how our lives would be different if we had only the sun to give us light. Would we be able to live if we did not have **any** light at all?

3. Cut pictures of light sources from catalogues and magazines. Use them to make a collage.

4. Conduct an experiment to see what happens to plants when they don't get any light. Leave one plant on a sunny windowsill and place a second plant in a dark closet. Have students predict what will happen to the plant that gets no light. Leave the plants for several days. What happened? Do plants need light to live?



Lesson: **Light Reflectors** (Grade One)

As this lesson emphasizes language related to science concepts, you may wish to teach it during your Science period.

Science Concepts:

1. Light moves in a straight line. When it moves, it hits objects in its path and bounces off them in straight lines.
2. Most objects do not produce their own light, but reflect light produced by other objects.
3. Some objects reflect light better than others.

English Vocabulary (*actually developed in this lesson)

* names of familiar materials
* reflect/s
* reflector/s

* poor
* good

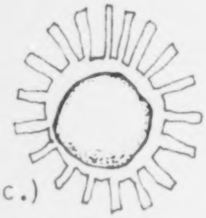
* shiny/dull
* light/dark
* smooth/rough
* white/black

English Sentence Patterns (*actually developed in this lesson)

How much light does a __________ reflect?
A __________ reflects lots of light.
A __________ doesn't reflect much light.

A/The __________ is a (good/poor) light reflector.

* What things are good/poor light reflectors?
* Things that are __________ are good/poor light reflectors.



Special Materials Required

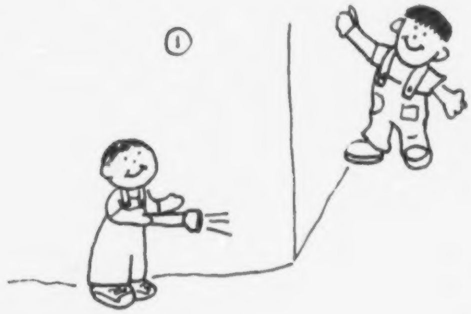
Variety of materials (mirror, tinfoil, black pepper, pie pan, etc.)
Flashlight
Polaroid camera

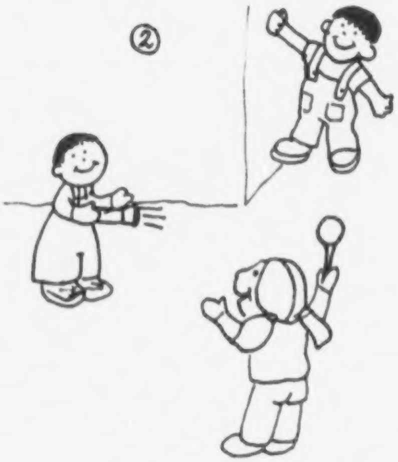
Concept Development/Language Exposure

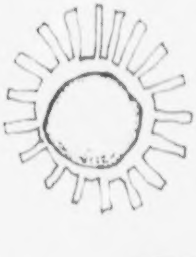
1. a) Discuss concepts developed in the previous lesson: We need light to see; some things make their own light and others don't. Ask students, "If we need light to see, how do we see things that don't make their own light?" Discuss students' responses.

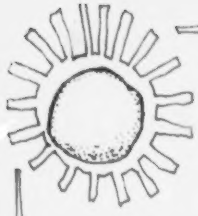
   b) Darken the room. Have several students hold up objects. Can the other students see the objects? Why not? Shine a flashlight on one of the objects. Can students see it now? Why? How did the light from the flashlight get to the object? Have a student shine the light on one of the objects as you walk along the path of light and gently tap two chalkboard erasers together. Can students see now how the light gets to the object? Does it go in a straight line?

2. a) Darken the room. Have one student stand around a corner from another student holding a flashlight. Ask students, "When Johnny turns the flashlight on, will you be able to see Sandra?" Conduct the test. Why couldn't you see Sandra? (Use chalkdust to make the beam visible.) Can you think of a way to make the light go around the corner? Have another student stand at the corner holding a mirror. The student holding the flashlight should shine the flashlight onto the mirror. Can you see the student around the corner now? Why? (Use chalkdust to make lightbeam visible.) What happened to the light? Introduce and discuss the word "reflect."

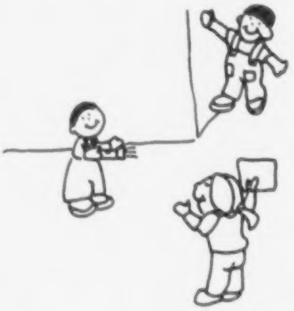








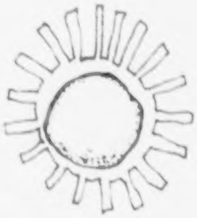
b) Present students with a variety of other objects (e.g., a sheet of tinfoil, a pie pan, a styrofoam ball, a sheet of white paper, a sheet of black paper, etc.) to substitute for the mirror. Have them predict which will work. "If Johnny holds the black paper instead of the mirror, will we be able to see Sandra?" Try many materials; have students suggest others to try. Sort the materials (as you conduct the experiments) into two groups - "good light reflectors" and "poor light reflectors."

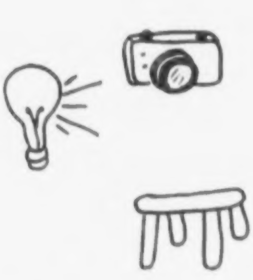


c) Examine the group of "good light reflectors." How are they similar? Brainstorm words that describe the items. Use brainstormed words in the sentence pattern, e.g., "Things that are shiny are good light reflectors." Repeat the procedure for the group of "poor light reflectors."

3. a) Have one student sit in the middle of a circle of classmates. Darken the room. Shine a light on the student's face from one side. Have students on the lighted side report their observations (e.g., Can they see the student's face well?). Have students on the shadow side do the same. Brainstorm ideas about how the shadow could be made lighter without using another light. Have students sit in front of the "lighted" student and observe what happens when a sheet of white cardboard is held on the shadow side. Use many other materials (tinfoil, black paper, etc.). Discuss the results using the sentence patterns.

b) Set up a photographic session with students using an instant camera as shown:





Have a student sit in the chair. Take a photo. Examine the photo noting that half of the student's face is in shadow. Ask students if they have any ideas about how the shadow could be made lighter. Try out their suggestions. Take a picture using each suggestion. Analyze the photographs. Use the sentence patterns to discuss them.

Language Practice

L 1. Object Search: Place a variety of items in a box at the front of the room. Divide class into two teams and have them stand in lines facing the front. Call out a statement such as, "Things that are shiny are good light reflectors." The first player from each team runs to the box, selects an article that fits the description, and returns to his/her team. Repeat until each student has had a turn.

L 2. Musical Chairs: Place chairs (one less than there are students) back to back in a row. Students walk around the chairs as teacher makes statements. When s/he makes a false statement, students must sit on the chairs. Remove one chair after each round.

L/S 3. Cumulative Chain Drill: Sit in a circle with a small group of students. Begin by making a statement about good light reflectors. The first student repeats teacher's statement and adds another item. Continue around the circle until each student has had a turn or no more items can be added. For example:

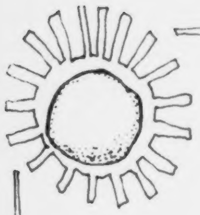
Teacher:	"Things that are shiny are good light reflectors."
Student #1:	"Things that are shiny and light are good light reflectors."

Repeat for poor light reflectors.

L/S 4. Bean Bag Toss: Place items in a random arrangement on the floor. Make a statement such as, "Things that are black are poor light reflectors." Student tosses a beanbag onto an appropriate item and repeats the statement.

S 5. Categories: Students stand in a circle. One student stands in the centre, tosses a ball to one of the other players and names a category (i.e., poor light reflector or good light reflector). The player holding the ball must name an example before the thrower counts to 10. If s/he is successful, s/he takes the thrower's place.

E.g., Thrower: "Good light reflector."
Player: "Things that are white are good light reflectors."



S/R 6. Dictation: Distribute items to students. Each student, in turn, must dictate a statement about his/her item. Record the statement on a sentence strip and read it aloud with student. When each student has a strip, have them sort themselves into two groups: poor light reflectors and good light reflectors. Have them put all the strips that are the same together.

R 7. Word Hunt: Write the descriptive words that appear on the sentence strips on the chalkboard. Read them over with students. Then call out one of the words and a student's name. S/he must circle the word called.

Application

1. Demonstrate that light travels in a straight line with these activities:

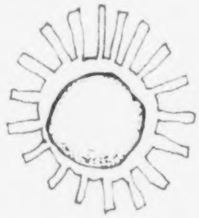
   a) Give students a piece of rubber hose and instruct them to bend it in the middle, point one end toward a light source and look in the other end. What does s/he see? Now have him/her straighten the hose and look in it again. Can s/he see the light?

   b) Punch holes in the centre of four index cards. Use a piece of plasticene to stand one card up on a desktop. Shine a flashlight through the hole and have students look through the hole from the other side. Can they see the light? Line up the next card so the light is visible through both holes. Continue until all four cards are lined up so that the light is still visible. Are the holes in a straight line? Move one card a few centimeters to one side. Is the light still visible? Why not?

   c) Have students bounce balls on a flat surface. (Don't bounce too hard!) Have them experiment with bouncing balls at different angles. Demonstrate, with a flashlight and a mirror, how you can "bounce" light. Allow students to experiment with shallow bounces, steep bounces, vertical bounces, etc. Discuss what happens.

2. a) Find out how mirrors are made: Scratch the back of a mirror. What comes off? What would happen if you scratched all of this material off?

   b) How do mirrors help us? (To see in dark places, to see ourselves, to see behind us, etc.) Go for a mirror hunt around the community to see how many different types of mirrors you can find. Take pictures of them. Make a book explaining the uses of the different types of mirrors.

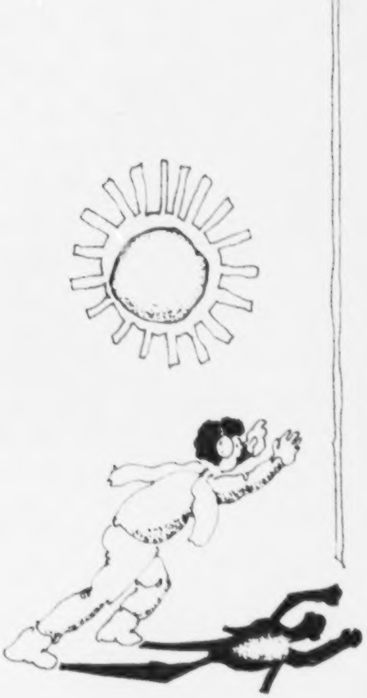


c) Brainstorm things that could substitute for mirrors (aluminum bowls, smooth water, a silver spoon, etc.).

d) Light Tag: Two players use mirrors to reflect a "spot" of light. One player tries to tag the others with the "spot."

e) Try to copy a word while looking only in a mirror.

3. Give students sequins and sparkles to make the words "good light reflector" and dull circles of paper, buttons or stickers to make the words "poor light reflector."



Science/Social Studies

1. Set up a shadow centre in a large appliance box. Tape the open end shut, then cut a door on one of the closed sides. Staple a dark cloth across the doorway. Set up a table inside where students can work. Put a table outside too for art projects, storage, etc. Provide flashlights, paper, familiar objects, scissors. Allow students to devise their own experiments and/or provide task cards.
*2. Go for a walk on a sunny day and observe the shadows made by poles, buildings, people, etc.
3. Go outside on a day when there are fluffy cumulus clouds and observe the shadows made by them. Simulate this in the classroom with a lamp and paper clouds.
4. Find out how shadows affect the temperature of the surfaces on which they fall. Take temperature readings of a surface that is both in the sunlight and the shade. What is the difference in temperature? Try this with other surfaces (grass, pavement, glass, etc.).

Teacher's Notes

These are possible activity ideas for this topic. They can be used in lessons you make up, as enrichment activities, or as learning centre activities. Most can be done in any language. Activities with an * are actually used in the sample lessons which follow. Spaces have been left for you to record your own activity ideas.

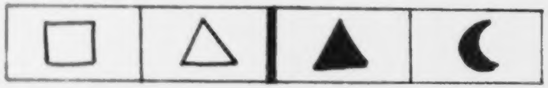
ACTIVITY IDEAS

TOPIC B: WHAT MAKES A SHADOW?

Math

1. Shadow dominoes.

E.g.,



(Match pictures to their shadows.)

Language Arts

1. Students write "Marvellous Me" stories to accompany their silhouettes. (Art #2.)
2. Introduce "sh" digraph. Make a collection of objects and pictures that begin with "sh."
3. Brainstorm a list of words that could be used to describe shadows.

Music, Poems, Stories

1. "One Day When It Was Sunny"
2. "Shadows"
3. "The Shadow"
4. "Shadow Dance"

*5. "My Shadow and I"

Art

*1. Use your hands to make animal shadows on a piece of white paper. Have a friend trace around the shadow. How many different animals can you make?

*2. Trace shadows made by students' profiles. Cut them out and mount on contrasting paper. Students try to match name cards to shadows.

Physical Education/Movement

1. Make "monster" shadows.

*2. Play shadow tag.

*3. Do shadow tricks:
    Shake your own shadow's hand.
    Try to jump on your own shadow.
    Try to make your shadow shake the hand of your friend's shadow. Don't touch your friend!

4. Make people shadows that are happy, sad, young, old, pretty, ugly, etc. Make shadows of two people having an argument.

Special Activities

1. Hold up objects behind a sheet that is lit by a lamp or other light source. Students guess what the objects are by observing their shadows.
2. Find out about Groundhog's Day (February 2nd). Where did it originate? When? Why? Is there any scientific basis for it?
3. Stage a shadow play based on a familiar story or legend. Make puppets in flat solid shapes from posterboard and tape them to sticks. Add bits of fabric, yarn, etc. to puppets to give them texture.
4. Make puppet props for a play or poem. Paint them with florescent paint. Use a black light to illuminate the room when you present the play. (Have students wear black clothing so that they will not be seen as they manipulate the puppets/props.)

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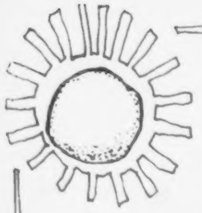


Lesson: **What Makes a Shadow?** (Grade One)

As this lesson emphasizes language related to science concepts, you may wish to teach it during your Science period.

Science Concepts:

1. A shadow results when an object blocks the passage of light.

English Vocabulary (*actually developed in this lesson)

* shadow	* names of familiar light sources
* block/s/ing	* names of familiar objects

English Sentence Patterns (*actually developed in this lesson)

* How can you make a shadow?
* You can make a shadow by __________.

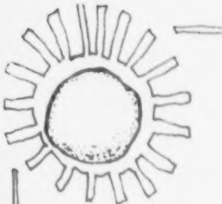
What do you need to make a shadow?
You need a __________ and a __________ to make a shadow.

What happens when the/a __________ blocks the light from the __________?

When the/a __________ blocks the light from the __________ it makes a shadow.

Special Materials Required

Variety of light sources/pictures of light sources
Variety of objects
Screen



Concept Development/Language Exposure

1. Go for a walk around the community to look for shadows. When students locate a shadow, ask them to try to describe how it was made. Would they have been able to find shadows if clouds covered the sky?

2. a) Tell students that you are going to do some experiments to try to find out how to make a shadow. Set up an overhead projector (or any other light source) so that it will shine onto a screen. Do not turn the projector on at this point.

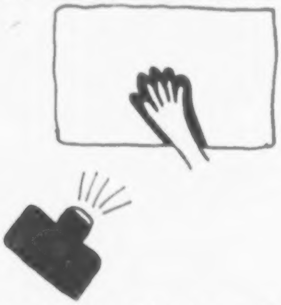
   Tell students that you are going to darken the classroom. Do they think there will be a shadow? Why/why not? Test their predictions. Was there a shadow? Why not?

Now, tell students that you are going to turn the projector on so that it shines on the screen. Do they think there will be a shadow? Why/why not? Test their predictions. Was there a shadow? Why not?

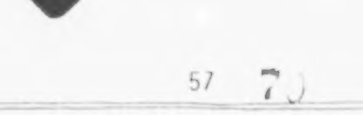
Ask students if they know how to make a shadow. Discuss and test their ideas. What did they find out about making a shadow?

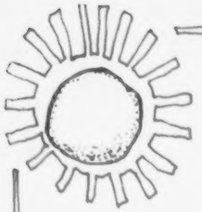
b) Model the sentence pattern as you demonstrate how to make shadows with various objects and light sources.

"You can make a shadow by blocking the light with your hand."



"You can make a shadow by blocking the light with a book."





c) Provide each student with an object. Ask them, "How can you make a shadow?" As each student demonstrates, model the sentence pattern, "You can make a shadow by ________."

Language Practice

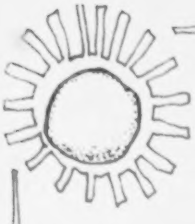
L 1. Find the Objects: Have students stand in a circle holding hands. One student stands outside the circle. Place a box containing the light sources (or pictures) and another box containing objects (or pictures) inside the circle. Students call out: "How can you make a shadow?" Teacher responds, for example, "You can make a shadow by blocking the light with a book." The outside student must try to enter the circle to find the objects, while the other students try to prevent him/her from doing so by raising and lowering their arms. NOTE: After some practice, use this as a speaking activity by having the student repeat the statement after s/he locates the objects.

L 2. Middle Man: Place the light source pictures in a line opposite a line of object pictures. Assign a student to each picture. Have one student stand in the middle of the two lines. When the teacher calls out a statement, the two students standing on the pictures named attempt to exchange positions before the middle man can take one of their places. If the middleman succeeds, s/he takes over the picture of the unlucky runner who now becomes the middle man. For example:

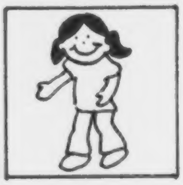
Teacher: "You can make a shadow by blocking the light with a flag." (Students standing on the pictures of the sun and the flag try to trade places.)

L/S 3. Repetition Drill: Make a series of statements using the sentence patterns. Students repeat each one immediately.

L/S 4. Follow the Leader: Set up a projector and screen close to a table of objects. Have students stand in a line behind you. They must copy everything you do. Walk over to the table, select an object and make a shadow with it. Describe what you are doing using the sentence pattern (E.g. "You can make a shadow by blocking the light with a pencil."). Each student, in turn, must copy your action and repeat the sentence.

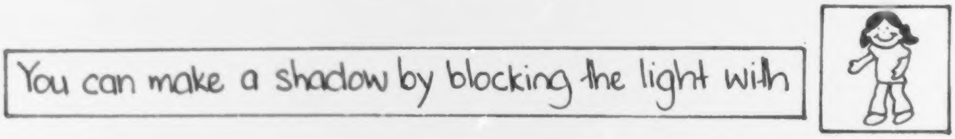


S 5. a) Place object pictures in a bag. Student withdraws a picture from the bag and makes a statement about it. For example:



"You can make a shadow by blocking the light with your body."

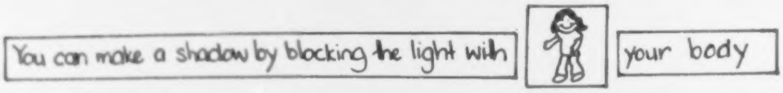
S/R b) Repeat the above activity, but have students place their pictures in the blank spaces of a sentence strip:


You can make a shadow by blocking the light with

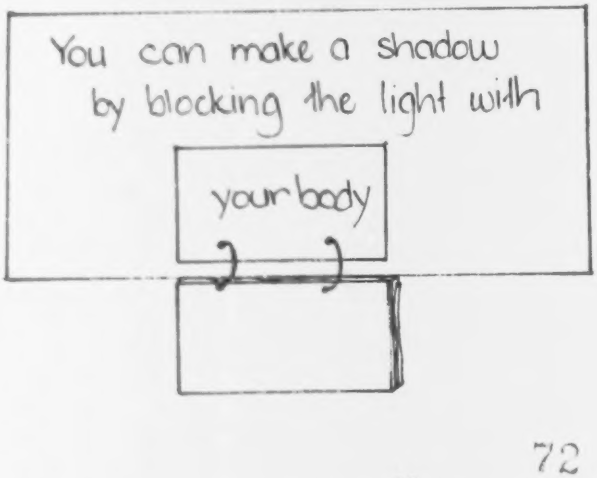
Have each student read his/her statement to the rest of the class.

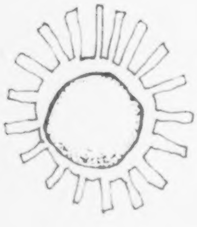
Insert word/phrase cards next to pictures. Read the statements with students.

R c)


You can make a shadow by blocking the light with
your body

R/W 6. Flip Books: Make flip books as shown. Brainstorm a list of objects that can be used to make shadows.


You can make a shadow
by blocking the light with
your body



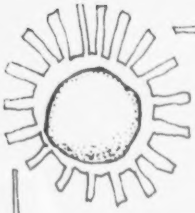
Application

1. a) Have students use their bodies to make animal or other kinds of shadows on the screen. After some practice, have each student demonstrate a shadow. As s/he does so, s/he chants, "Look up on the wall. What can you see?" Other students try to guess what the shadow is and respond, "I see a ________ looking at me."

   b) Photograph students' body positions with an instant camera as they make their shadows. Other students can try to reproduce the shadows by copying the positions shown in the photographs.

   c) Have each student demonstrate his/her favourite shadow from the photo file developed in the previous activity. Trace around the shadow on a piece of dark paper. Have the student cut it out and mount it on paper of a contrasting colour.

2. Have each student stand so that a shadow of his/her profile is cast on a sheet of dark paper. Trace around the shadow. Have the student cut it out and mount it on a piece of white paper. Write students' names on cards. Have them try to match the name cards to the silhouettes.



Lesson: **My Shadow and I** (Grade One)

As this lesson emphasizes language related to a poem, you may wish to teach it during your Language Arts period.

Science Concepts:

A shadow results when an object blocks the passage of light.

English Vocabulary (*actually developed in this lesson)

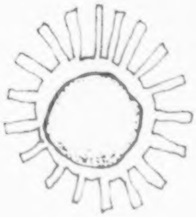
* verbs brainstormed by students

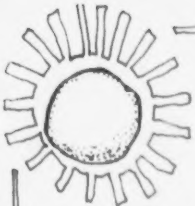
English Sentence Patterns (*actually developed in this lesson)

* My shadow and I
__________ together,
__________, shadow, __________!
__________, shadow, __________!
I __________
and my shadow __________
Shadow and I,
Shadow and I.

Special Materials Required

Polaroid camera
Tape recorder





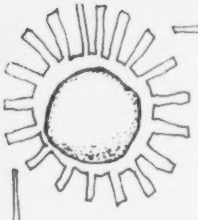
My Shadow and I

By Patti Wolcott
Addison-Wesley Publishing Company, Inc., 1975

My Shadow and I
walk together,
Shadow and I,
Shadow and I.
I walk and walk,
and my shadow walks.
Shadow and I,
Shadow and I.

My Shadow and I
run together,
Run, Shadow, run!
Run, Shadow, run!
I run and run,
and my shadow runs.
Shadow and I,
Shadow and I.

Note: These are the first two stanza's from Ms. Wolcott's book My Shadow and I. They provide the sentence patterns for this lesson. Brainstorm a list of other action verbs to use in the poem.



Concept Development/Language Exposure

1. Go out on the playground on a bright sunny day. Tell students to "play" with their shadows. What things can shadows do? Does your shadow always do what you do?

2. a) Brainstorm actions that students can do. Record these on a chart.

Things I Can Do

walk
run
hop
jump
crawl
swim
skip
spin
dance

b) Arrange students in pairs. One of the pair pretends to be the shadow of the other and copies every action s/he does. Have students practice doing the actions recorded on the chart.

c) Have one of the pairs come to the front of the room. Ask them which action they would like to perform. Have them perform this action as you recite the poem, for example:

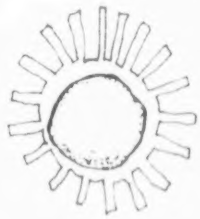
My shadow and I
jump together,
Jump, shadow, jump!
Jump, shadow, jump!
I jump
and my shadow jumps.
Shadow and I,
Shadow and I.

Repeat until all student pairs have had a turn to perform at least one action.

Language Practice

L 1. Same/Different: Have students listen to word pairs. When they hear a pair that is different, they clap their hands.

E.g., jump/jump, swim/spin, crawl/crawl,
hop/hop, etc.



L 2. Simon Says: Arrange students in pairs. One is the shadow of the other. Make statements. If the statement starts with "Simon says," students perform the action. If the statement does not start with "Simon says," students remain still. For example:

Teacher: "Simon says, 'My shadow and I crawl together.'" (Students crawl.)

Teacher: "My shadow and I crawl together." (Students remain still.)

L/S 3. Oral Cloze: Recite the poem, omitting key words. Students provide these words. For example:

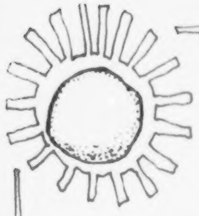
Teacher: "My shadow and I hop together.
Hop, shadow, __________!"

Students: "Hop!"

S 4. Follow the Leader: Students form a line behind the teacher. (This activity should be done on the playground or in the gym.) Begin to recite the poem and perform appropriate actions. Students chime in and copy the teacher's actions. After a bit of practice, students may take turns being the leader.

S/R 5. Pocket Chart: Write the poem on sentence strips. Leave blanks in which to insert verb cards. Select one verb and write it on seven cards which will fit in the spaces. Begin chanting the poem with students. Point to the words to focus their attention on the print. Place verb cards in the appropriate places in the chart. For example:

My shadow and I | walk | together.
Walk | shadow | walk
Walk | shadow | walk
I | walk | and my shadow | walks
Shadow and I
Shadow and I



Discuss the fourth line of the poem. "Does it sound correct the way it is?" What should it say? How can we change it to make it correct?" Make correction on the verb card, "swims." Read the poem again with students.

Repeat many times with other verbs.

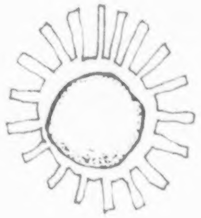
R/W 6. Class Poem: Group students in pairs. Have each pair write one verse which will become part of a class poem. Some students may be able to copy the poem from the pocket chart model; others may require an outline to fill in.

My shadow and I _____ together
Walk shadow _____
_____ _____ _____
I _____ and my _____ _____
Shadow and I
_____ _____ _____

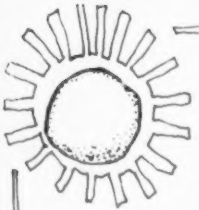
Take pictures of students performing the actions recorded in their verses. Use these photographs to illustrate the book. Read the book together. Tape record each pair of students reading their verses. Place the tape and the book in the listening centre.

Application

1. Shadow Tag: Select one player to be IT. The other players run and IT chases them, trying to step on one of their shadows. When IT steps on a shadow, s/he calls, "You're IT!" The new IT chases the other players and tries to step on someone else's shadow. Discuss with students whether they could play this game on a cloudy day? In the dark?



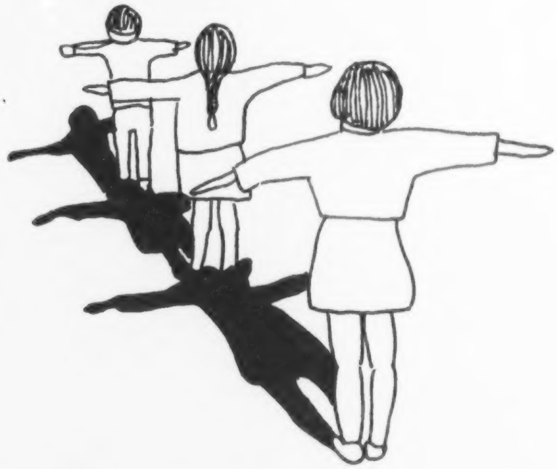
2. Who Is It?: Invite a mystery guest to the classroom. Seat the guest behind a sheet and shine a light so that a shadow of the guest is visible to students. Students try to determine who the guest is by asking questions that require only "yes" or "no" answers. (The guest should try to disguise his/her voice when answering questions.)



3. Try various shadow tricks on the playground:

   a) Six Armed Monster: Have three students line up and hold their arms out in various poses. They should align themselves so that the shadow appears to have only one head and one body, but six arms.

   b) Totem Pole: Have students stand in a line. They should be far enough apart so that their shadows appear to be standing on the shoulders of the shadows behind them.



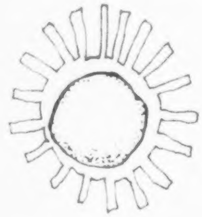
   c) Hand Shakes: Arrange students in pairs. They must attempt to get their shadows to shake hands without touching their own hands together.

   d) Have students attempt to hide their shadows, shake hands with their own shadows, run away from their shadows, etc.

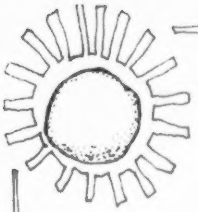
4. Brainstorm names which suggest movement for each student. For example:

   Jumping Jane
   Skipping Sam
   Rolling Robert

   Have students move in the ways that their names suggest.



5. Have students write "Shadowy Stories." For example: What if your shadow did whatever it wanted to do and not what you wanted? What if you had your friend's shadow instead of your own? What if your shadow got smaller and smaller and smaller and finally disappeared?



Lesson: **Letting Light In** (Grade One)

As this lesson emphasizes language related to science concepts, you may wish to teach it during your Science period.

Science Concepts:

1. Light passes through some things better than through others.

English Vocabulary (*actually developed in this lesson)

* pass/es through * all * names of familiar objects
* most
* no/none

English Sentence Patterns (*actually developed in this lesson)

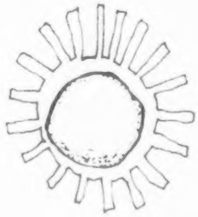
How much light passes through a __________?
__________ light passes through a __________.

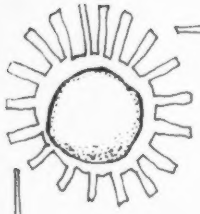
* Name one thing that lets __________ light through.
* __________ lets __________ light through.

Things that let most light through make light/dark shadows.
Things that let some light through make __________ shadows.
Things that let no light through make __________ shadows.

Special Materials Required

Sheets of: clear plastic wrap
plexiglass
glass
coloured cellophane
gift wrap tissue
waxed paper
brown paper
cardboard
foil
etc.
Familiar classroom objects
Projector and screen

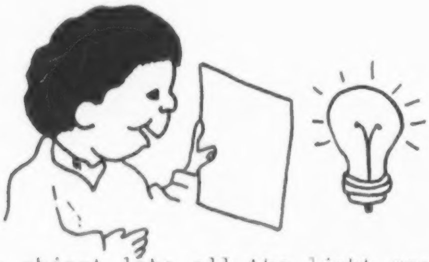




Concept Development/Language Exposure

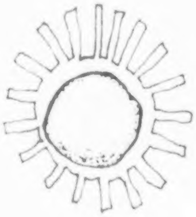
1. Talk with students about windows: Why do we put windows in buildings? What happens when windows get dirty? Where else do we use glass? Why? What other things could we use instead of glass for these purposes?

2. a) Set up a light as shown in the illustration. Place sheets of various materials on a tabletop nearby. Have each student, in turn, select one of the sheets and hold it up between his/her face and the light. Can s/he see the light clearly through the sheet? Why/Why not? The ensuing discussion should lead students to the understanding that some things let most of the light through, some things let only some light through, and some things let no light through.



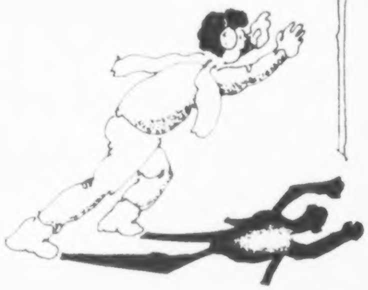
b) To demonstrate that no object lets all the light pass through, show students that you can make a shadow with a piece of glass, a sheet of plastic wrap, etc. Remind students that in order to create a shadow there must be something that blocks the light. The shadows made by the glass and plastic are very faint because most of the light can pass through; the glass and plastic block only a small amount of light.

c) Place a few objects on a table. Tell students that you are going to place the sheets of materials (from #2a) over the objects. Have them predict which materials will allow you to see the objects clearly, which will allow you to see them a bit, and which will not allow you to see them. Test the predictions. Discuss results.



3. Categorize materials using boxes labelled:
most light
some light
no light

Hold up items from each box and model the sentence pattern. For example, "The plastic lets most light through," or "The cardboard lets no light through," or "The tissue lets some light through."



Language Practice

L 1. Hop the Line: Make a line on the floor with masking tape. Have students stand on the line. Make a series of statements. When students hear a true statement such as, "Glass lets most light through," they hop forward.

L 2. Stand Up/Sit Down: Students stand beside their chairs. Make a statement such as, "Glass lets no light through." If the statement is true, students sit down; if it is false, students remain standing.

L 3. Scramble: Have students sit on chairs in a circle. Distribute items, one to each student. Call out a category, for example, things that let no light through. Students holding such items must trade chairs. Occasionally call "Scramble!" Then everyone tries to get to a new chair. Change the items given to students often.

L/S 4. Hot Potato: Students sit in a circle on the floor. Hold up an item, make a statement about it, then hand it to one of the students in the circle. Students pass the item around the circle until the teacher gives a signal. The student left holding the item must repeat the statement which the teacher made.

S 5. Penny Toss: Place items on a large sheet. (A tablecloth is ideal.) Have students sit in a circle around the sheet and take turns throwing a penny onto one of the items. They must make a statement about the item on which their penny lands.

S 6. London Bridge: Two students form a "bridge" with their arms. The other students walk under the bridge as music plays. When the music stops, the "bridge" drops and traps one student. S/he must answer a question posed by the other students. For example:

Students: "Name one thing that lets no light through."
Student: "Cardboard lets no light through."

S 7. a) Scavenger Hunt: Tell each student to find one thing that lets most light through, one thing that lets some light through, and one thing that lets no light through. When students have gathered their items, have them hold up each one and make an appropriate statement about it. Other students listen to make sure the student makes the correct statement about each item.

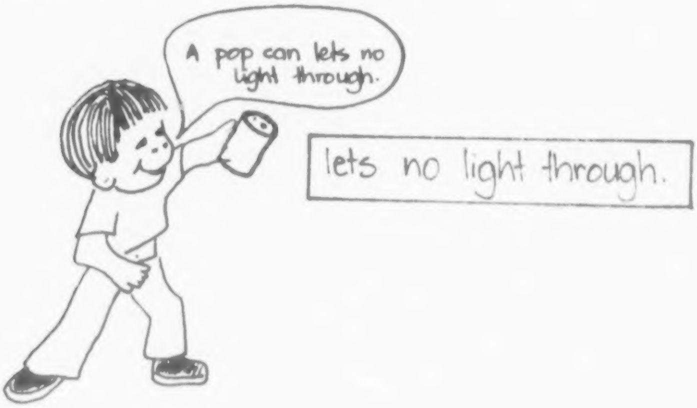
S/R b) Pocket Chart: Make up sentence strips as shown:

lets most light through.

lets some light through.

lets no light through.

Place the first sentence strip in the pocket chart. Have each student, in turn, place an appropriate item (found during Activity #7a) in the blank. Read the statement with the student.


A pop can lets no light through.
lets no light through.

R/W 8. Labelling: Have students match labels to items used in the previous activities. Have the labelled items displayed where students can easily refer to them. Make a worksheet as shown. Have students list items for each category on their worksheets.

lets most light through	lets some light through	lets no light through
plastic wrap	tissue paper	pop can
glass bottle	waxed paper	book
plastic bottle		tinfoil
plexiglass		cardboard
		brown paper

Application

1. Have students experiment with making shadows using the items from the previous activities. What do they notice about shadows made by those things that let no light through as compared to other things? Discuss the reasons for this. Give students items that they did not use in any of the previous activities. Have them predict what kind of shadows they will make.

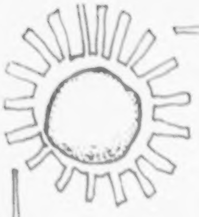
2. Visit various buildings in the community. Discuss items found in each that are necessary because of their distinct light transmitting properties.

   E.g. Curtains on windows that don't make rooms dark but allow privacy.

3. Stained Glass Picture: Outline a design on drawing paper with a black marker. Colour in the spaces with crayons. Some of the space may be left white. Turn the drawing over and lay it on newspaper. Rub cooking oil over the back of the picture. It will make the picture translucent. Display the picture in a window.

4. Stained Glass Mobile: Cut shapes for the mobile from black construction paper. Cut each one double so that there are two exactly the same. Cut large holes in each shape in spots where you want to see through. Paste pieces of coloured cellophane or tissue paper over the holes on one of the shapes. Paste the matching shape on top of that. Punch a hole near the top and hang the shape with thread.

Culminating Activities - Grade One



1. Theme Notebooks: Have students design their own covers for their Light and Shadow Notebooks. The notebooks may include poems, descriptions of experiments that the class did, pictures, small craft projects, worksheets, etc. related to the theme. It is important to allow students to choose what they will put in their notebooks. The notebooks are their personal records which they may take home to share with family and friends.

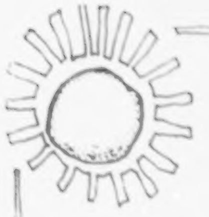
2. Have students make a shadow show for other classes. They hold up different objects, one by one, in front of a light source so that the shadow shows on a sheet (like a shadow play). The audience writes down what they think each object is. You could have a contest between classes to determine which group got the most correct answers.

3. Have your class make silhouettes of students, staff and well-known community members for a "Mystery Person" display. Students in the school try to guess who each person is.

4. Make a mural using materials that reflect light: tinfoil, metallic paper in various colours, pie plates, bits of mirror, etc. Darken the room. Shine a flashlight on various parts of the mural. Have students tell you what things come to their minds as they look at the mural.

5. Have students write triangular triplets about "light". These are three line verses, written in a triangular format, whose lines can be read in any order.

sparkling like diamonds
on the rippled water
the bright sunshine



Evaluation Activities - Grade One

It is important to assess what your students have learned during this unit. The following activities evaluate language and concepts. There are additional evaluation ideas and record keeping forms in the booklet Evaluation Guidelines for the Language Development/Science Units.

You can do them orally (in small groups or with individuals) to test listening and speaking or on paper to test reading and writing. These are only suggestions; you can substitute different content or vocabulary items to make them more appropriate for your students. You probably will want to include many other activities as well.

1. Tell or give the students four or five words or phrases. Have them indicate which do not belong.

   light source: sun, flashlight, mirror, candle, moon

   good reflectors: shiny things, black things, white things, dull things

2. Tell or give the students sentence beginnings to match to sentence endings.

Glass	lets no light through.
A book	lets some light through.
Wax paper	lets most light through.

3. Tell or give the students the beginning of a sentence and a number of possible sentence endings. They indicate which sentence endings are appropriate for the sentence beginning.

   You can make a shadow by
   - blocking the sunlight with your body.
   - standing in front of your school.
   - blocking the light from a flashlight
   - with a puppet.

INITIAL ASSESSMENT ACTIVITY - Grade Two

The following activities should be done before you teach any of the lessons. They will assist you to determine:

1. what students already know about the concepts of the topic and therefore where instruction should begin;

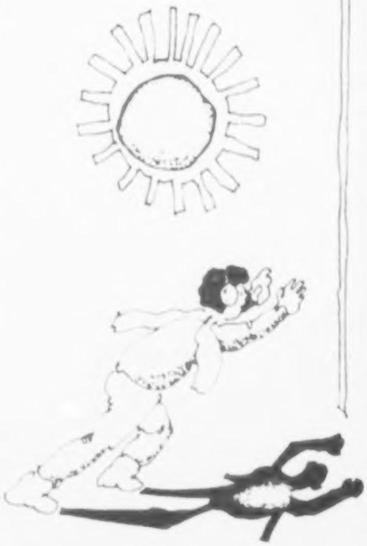
2. what interest students have in the topic and therefore the direction the unit should take; and

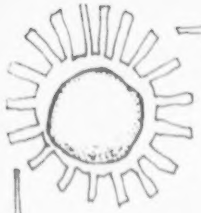
3. what language students already have to discuss the topic and what language they require.

One of the basic principles of the Language Development Approach and of all good teaching is that you should start with the student when planning and carrying out a unit. Before you begin to teach, it is important to assess your students' knowledge of and interest in the topic. You should determine what students already know about the topic/concepts you intend to cover. What ideas do students already have? What misconceptions do they have which you must address? What gaps are there in their knowledge which require that you teach certain lessons? What concepts do they know well enough so that you can skip the lessons which teach those concepts? What questions do they have? What relationships do they see between different aspects of the topic?

It is also important to identify what experiences students have which relate to the topic/concepts. By identifying these and building upon them in the lessons you can help students relate the new ideas and information to their own lives. It is important to do this because it assists students to internalize new concepts. It helps students make the concepts part of the conceptual framework which they use to understand and describe their world. If they do not have concrete, firsthand experiences to relate to each concept you will have to provide them wherever possible.

Another use for these activities is to help you identify particular interests of individuals, groups of students, or the whole class. You can then include activities in the lessons which involve student interests, thereby increasing motivation for them to participate and learn. You may decide to add, substitute or omit some lessons because of students' interests.

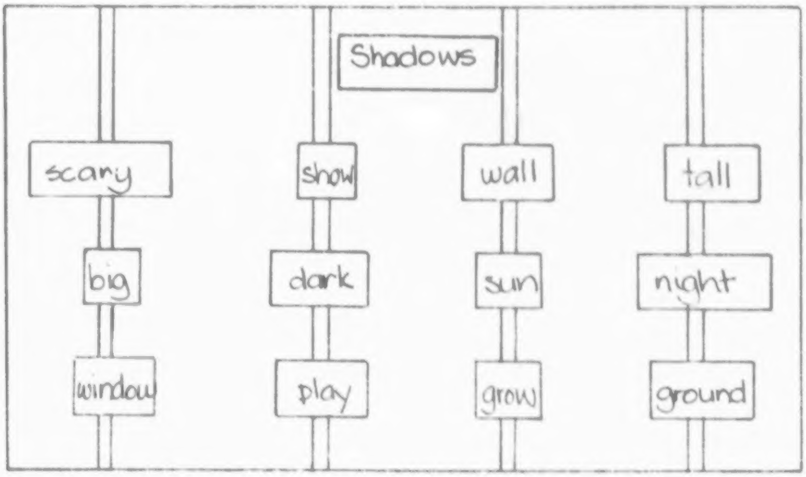




These activities will also help you determine what language students have to discuss the topic. You can find out what vocabulary items students already know and what associations they have for each word. It is important to ascertain the meanings students attach to words; sometimes their interpretations may surprise you! If they do not clearly understand terms or use them incorrectly, it will prevent them from understanding and incorporating the concept into their mental framework.

1. Brainstorming:

Look at pictures of shadows. Ask students to tell you words that come to mind immediately. Ask them to tell you what they know about shadows. Record their answers on cards and hang them on masking tape strips (sticky surface up) which you fasten to the wall or the chalkboard.



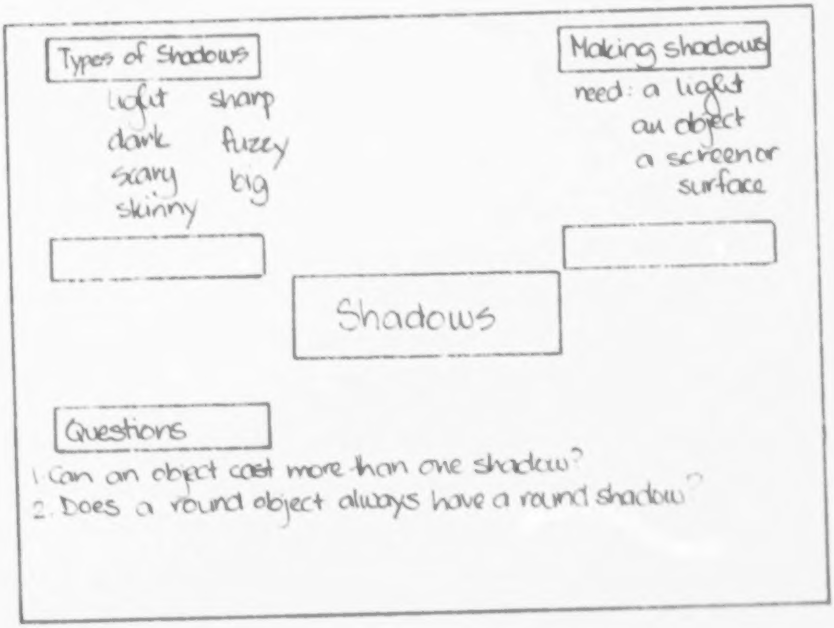
If students have difficulty with this activity you may wish to direct their thinking or prompt ideas by asking more specific questions.

E.g., "Where do you see shadows?"
"When do you see shadows?"
"Does your shadow always look the same?"
"What would you like to find out about shadows?"

Encourage students to predict answers to these questions even if they aren't sure of the exact responses. It might be interesting to record their predictions separately and compare them to the actual answers as you study the unit. Students may think of their own questions as well. Keep a list of all the questions the class cannot answer to focus the lessons you teach during the unit.

After you record their responses on cards have students chant the words with you. Talk about the words: Which word is the most interesting? the least? the most puzzling? What other word can you think of that means almost the same thing? What comes to your mind when I say ______? What do you think this word means? Etc.

Transfer the words to a flowchart to provide a permanent reference. As you teach the unit you may wish to add new information to the chart. You may also identify new questions and, hopefully, the answers. At the end of the unit you can review the chart with students. Keep it as a reference for future use.



Types of Shadows

light sharp
dark fuzzy
scary big
skinny

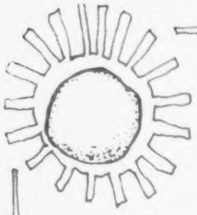
Making shadows

need: a light
an object
a screen or
surface

Shadows

Questions

1. Can an object cast more than one shadow?
2. Does a round object always have a round shadow?



SAMPLE QUESTIONS

You can use these questions during the Initial Assessment activity to determine what experiences, language, and knowledge students have about the topic. You can also use the questions for assessing thinking processes throughout the Concept Development and Application phases of each lesson and during the Culminating and Evaluation activities.

QUESTIONS FOR ASSESSING EXPERIENCE:

1. Have you been in a situation where __________?
2. What do you know about __________?
3. Have you ever seen __________?
4. Have you ever experienced __________?
5. Have you ever been __________?
6. Have you ever done __________?
7. Has something like this ever happened to you?
8. When was the last time you __________?

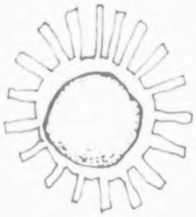
QUESTIONS FOR ASSESSING LANGUAGE:

1. What do you think these words mean?
2. Can you give me another word that means __________?
3. What comes to your mind when I say __________?
4. Have you heard of the word(s) __________?
5. What words can you think of when I say the word __________?

QUESTIONS FOR ASSESSING THINKING PROCESSES:

Cognitive Memory (details, information)

1. Who . . . . ?
2. What are the facts?
3. What are the most important details?



4. What is the . . . .?
5. What do you mean by . . . .?
6. What is your interpretation of what happened? (What do you think happened?)
7. When?
8. Where?

CONVERGENT/GENERALIZING (getting the main idea)

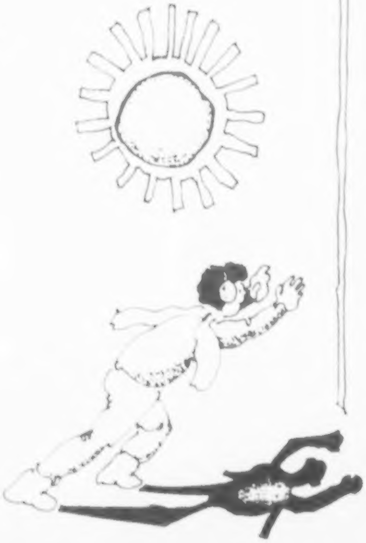
1. What are the chief points?
2. Given that information, what is the main idea?
3. What is the single, most important idea?
4. State the idea in one sentence.
5. Explain __________.

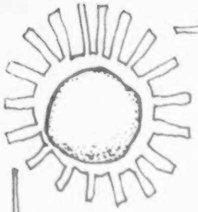
STRUCTURING/RELATING (arranging relationships)

1. Categories: Which group does that belong to?
   How would you classify . . . .?
   What type would you . . . .?
2. Comparisons: How are they alike? same? similar? identical?
3. Contrast: How is it different? in opposition to? unlike?
4. Cause and Effect: What will happen if? Why?
   What will happen as a result of?

DIVERGENT/USING/APPLYING

1. What might happen if?
2. If you use that idea, what would it mean for __________?
3. Apply that idea to our (this) situation.
4. What would result if __________?
5. If you were given these facts, what would you do to __________?





6. How would it be different if we used this idea?
7. What could the advantages/benefits be if we applied this idea/process?
8. What do you think the (story/paragraph) will be about?

EVALUATION/JUDGING/VALUING

1. How do you feel about this idea?
2. What is your opinion?
3. What is the best __________?
4. Are you satisfied with that answer/plan?
5. Can this statement be made? Why?
6. Out of all the information, what can be used to prove your point?
7. How would you judge?
8. What is your opinion or conclusion about the product/plan/idea?
9. Why did you think it worked/didn't work?
10. What is fact? What is opinion?

Science/Social Studies

1. Experiment with different light sources to find out which make better shadows.
2. Provide a small group with a doll and a flashlight. Let them experiment with making long and short shadows, shadows on all sides of the doll, and making the shadow disappear.
3. Make a shadow in a room with the blinds open and lights on. How would the shadow be different if the room were darker? Try it.
4. Can you see a shadow with your eyes closed? Have someone pass their hand or a piece of paper in front of your eyes. Try to tell when the shadow is there.

*5. Look at pictures that show objects and their shadows. Have students determine where the light is coming from in each picture and what time of day it is.

6. Pretend that an overhead light (not fluorescent) is the sun. Where is your shadow as you walk toward it? As you stand under it? As you walk away from it?

Teacher's Notes

These are possible activity ideas for this topic. They can be used in lessons you make up, as enrichment activities, or as learning centre activities. Most can be done in any language. Activities with an * are actually used in the sample lessons which follow. Spaces have been left for you to record your own activity ideas.

ACTIVITY IDEAS

TOPIC C: HOW DO SHADOWS CHANGE?

Science/Social Studies con't

7. Go outside early on a sunny morning. Face the east. Where is your shadow? Face the west. Where is your shadow? Repeat in the late afternoon. Which way do shadows point in the morning? In the afternoon?

*8. Place a pencil in a lump of plasticene. Set it on a large sheet of paper outside. Trace the shadow of the pencil every hour. How did the shadows change?

*9. Mark a position on the playground. Have someone stand in the position. Trace his/her shadow with coloured chalk or powdered paint. Repeat several times over the day. How did the shadows change?

*10. Shine a flashlight onto a stick so that its shadow is cast on a wall. Have a friend measure the shadow. How can you make the shadow shorter? longer? Did the width of the shadow change?

Language Arts

1. Write "shadowy" stories. For example:
    The Day I Lost My Shadow
    My Shadow Won't Stop Growing

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Music, Poems, Stories

1. "Shadow Race"
*2. "I Have a Little Shadow"
3. "Shadow Wash"
4. "My Shadow"

Art

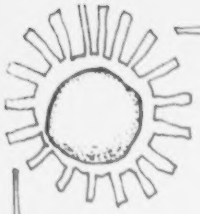
1. Shadow Mural: Paint a large sun in the centre of a length of mural paper. Each student draws a figure on one side or the other of the sun, then draws its shadow in the appropriate position.
2. Shadow-Shape Pictures: Fold a sheet of white paper and a sheet of black paper in half, lengthwise. Cut along the fold of the black paper and discard one half. From the remaining half, cut a simple design that starts and ends where the fold was. Save all the pieces. Glue the black paper from which the design was cut onto one half of the white paper. Glue the black design on the white paper at the fold so that it mirrors the white design on the black paper.

Physical Education/Movement

1. Shadow Fight: One student stands slightly closer to the screen than his/her partner. They punch away at each other (never actually hitting) and make it appear to their audience that they really are boxing.

Special Activities

*1. Shadow Mysteries: Cut silhouettes of familiar objects from black paper. Make some of them more difficult to identify by drawing them as if you were standing directly above the object. Students match silhouettes to objects.



Lesson:

Where is the Light Source in Relation to the Shadow?

(Grade Two)

As this lesson emphasizes language related to science concepts, you may wish to teach it during your Science period.

Science Concepts:

1. A light source which allows a shadow to be cast is always located in the direction opposite that of the shadow.

English Vocabulary (*actually developed in this lesson)

- * shadow
- * names of various light sources
- * names of various objects
- * in front of
- * behind

English Sentence Patterns (*actually developed in this lesson)

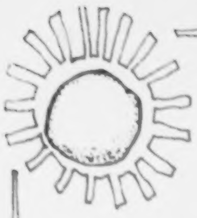
* If the light source is in front of/behind the object where is the shadow?

* If the light source is behind/in front of the object the shadow is in front of/behind it.

Special Materials Required

Light sources

Objects



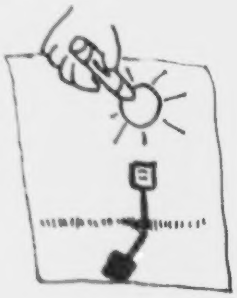
Concept Development/Language Exposure

1. Introduce the concepts of "in front of" and "behind" using several real examples.

   E.g. Have several students stand in a line. Use the terms to describe their positions: "Mary is in front of Simon. Simon is behind Mary."

2. Have students try to make shadows of themselves on the playground on a sunny day. Can they make their shadows lie behind them? Where is the sun when they do this? Can they make their shadows lie in front of them? Where is the sun now?

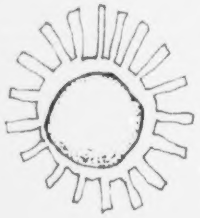
3. Go for a walk around the school yard on a sunny day. Have each student find one shadow and draw a simple picture showing the positions of the sun, the object and the shadow.

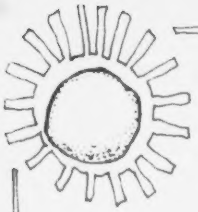


   As students are drawing, circulate among them and discuss their pictures with them.

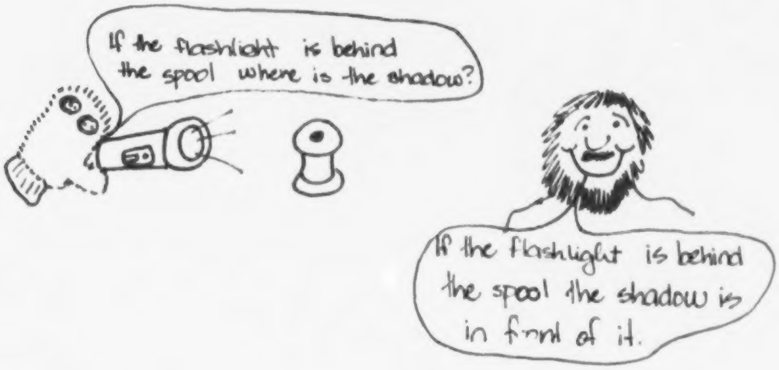
   E.g. "Where is the sun in your picture? Where is the shadow?" When you return to the classroom, have students examine the pictures. Are there any similarities in the positions of the sun, the objects and the shadows?

4. Put a dot on a sheet of paper. Place a tin can on the dot. Shine a flashlight at the can from one side. Trace around the can's shadow. Draw an arrow on the shadow to show the direction the light came from. Now shine the light at the can from the other direction. Outline the new shadow. Draw an arrow to indicate the direction the light came from. What does this tell you about where to find shadows? Model the sentence patterns.





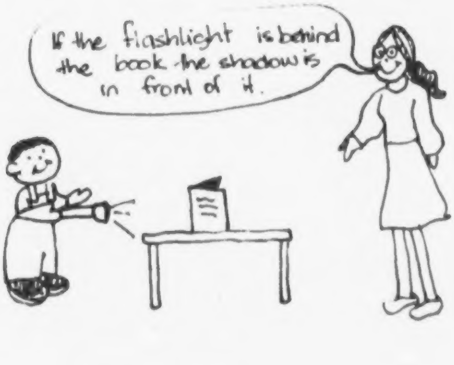
5. Use a puppet to demonstrate positions of light source, objects and shadows. Carry on a conversation with the puppet using the sentence patterns:

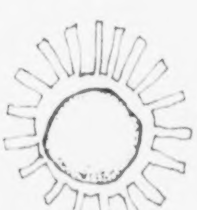

If the flashlight is behind the spool where is the shadow?
If the flashlight is behind the spool the shadow is in front of it.

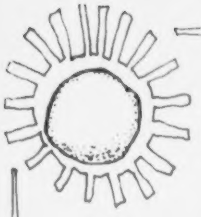
Language Practice

L 1. Demonstrate: Have ready a flashlight, a sheet of white bristol board and a collection of objects. Make a statement using the sentence pattern and call out a student's name. That student must come to the front of the room and illustrate the statement using the materials provided.

E.g. Teacher: "If the flashlight is behind the book the shadow is in front of it."







L 2. True/False: Make a series of statements. Students indicate whether the statements are true or false.

E.g. Teacher: "If the light source is behind the book the shadow is behind it." (Students indicate that statement is false.)

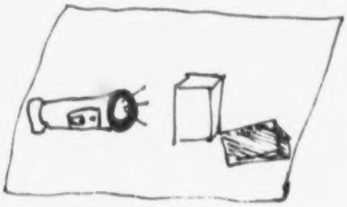
Teacher: "If the light source is in front of the pencil, the shadow is behind it." (Students indicate that statement is true.)

L/S 3. Sentence Completion: Make statements which students complete. For example:

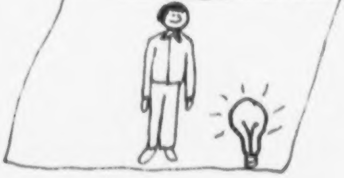
Teacher: "If the light source is behind the ball the shadow is ________."

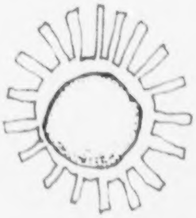
Students: "In front of it."

S 4. a) Prepare a series of cards, with each one showing a light source, an object and a shadow. Have students examine the diagrams and tell you if the shadows are drawn in the correct positions. Have them explain their answers using the sentence pattern.



b) Make a series of cards as in 4a), but omit the shadows. Have students draw the shadows and explain why they put them where they did.





As a variation of 4 a) and b), divide students into two teams. Each team could work together to analyze its diagram and explain the answer. You could also do this in pairs or as an activity in a learning centre. Students could make up their own cards as quizzes for other students.

S/R 5. Pocket Chart: Make up sentence strips and word cards as shown.

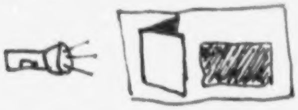
If the ____ is ____ the ____ the shadow is ____ it.

behind
in front of

flashlight
light
sun
candle

book
pencil
chair

Use a flashlight, a book and a sheet of white paper to create a shadow. Place the appropriate word cards in the sentence strip to describe the demonstration:



If the flashlight is behind the book the shadow is in front of it.

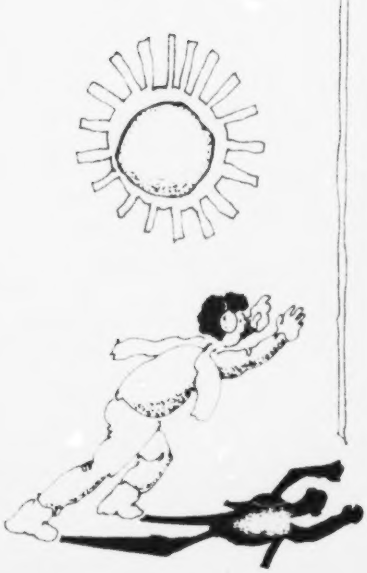
Repeat several times, varying the positions of the light source and the objects used. Have students set up their own demonstrations and build the appropriate sentences in the pocket chart.

Application

1. Sadie Shadow Says: (Play this game on the playground on a sunny day.) Teachers calls out a command, for example, "Make your shadow lie behind you." If the command is preceded by "Sadie Shadow Says," students perform the action; if it is not, students remain standing still.

2. Learn the poem "Shadow Race" (page 132) and have students dramatize it.

3. Divide students into several groups. Have each group make two or three sketches that show objects and their shadows. (In order to make the sketches, they may have to set up the situation with real materials first.) Have groups exchange sketches and try to predict where the light source for each sketch was located. Have the original group check the second group's answers. Demonstrate with real materials if there are any questions.



Lesson: **How Can You Change the Size of a Shadow?**

(Grade Two)

As this lesson emphasizes language related to science concepts, you may wish to teach it during your Science period.

Science Concepts:

1. The size of a shadow is dependent upon the relative positions of the object, light source and receiving surface.

English Vocabulary (*actually developed in this lesson)

* closer to	* bigger
* away from	* smaller

English Sentence Patterns (*actually developed in this lesson)

How can you make a shadow bigger/smaller ?

You can make a shadow bigger/smaller by ________ .

* What happens if you move the object closer to/away from the light source?

* If you move the object closer to/away from the light source the shadow gets bigger/smaller .

When is a shadow bigger/smaller ?

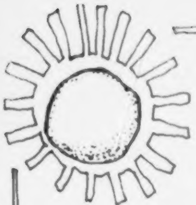
A shadow is bigger/smaller when the ________ .

Special Materials Required

Light sources

Objects

Projector/screen



Concept Development/Language Exposure

1. a) Introduce the terms "closer to" and "away from" using many concrete examples.

   b) Review the concepts "bigger" and "smaller" using concrete examples.

2. Divide class into groups of three. Provide each group with a flashlight, a ruler and a pencil with which to make a shadow. Have one student hold the flashlight, another the pencil, and have the third student measure the length of the shadow cast by the pencil. Have students experiment with making the shadow bigger and smaller. How big can they make the shadow? How small can they make it? What did they do to make the shadow smaller? To make it bigger?

3. Set up a screen and projector so students will be able to observe you making shadows and will also be able to see the shadows. Make a hand shadow of a dog or other animal. Tell students that you want to tell them a story about a dog that grew and grew and grew! Ask for ideas as to how you can make the shadow "grow." Make up a story about a dog that wouldn't stop growing. As you tell it, move your hand closer and closer to the light. Ask students to describe what happened as you moved your hand closer to the light. Model the sentence pattern, "If you move your hand closer to the light source the shadow gets bigger." Ask students to predict what will happen as you move your hand farther from the light source. Demonstrate. Model the sentence pattern, "If you move your hand away from the light source the shadow gets smaller."

4. Make shadows using a variety of objects. Carry on a discussion with a puppet as you do this so that you can model both the question and answer patterns.

Language Practice

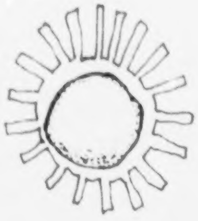
L 1. Sadie Shadow Says: Give directions using the words "closer to" and "away from." Students obey only if the words "Sadie Shadow says" precede the directions.

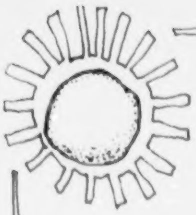
Teacher: "Sadie Shadow says, 'Move closer to the blackboard.'"

(Students obey direction.)

Teacher: "Move closer to the blackboard."

(Students remain still.)





L 2. True/False: Use the puppet from CD#4 to play a true/false game. Have puppet hold an object in the correct position to cast a shadow, but do not turn on the light. Ask a question using the pattern, for example, "What happens if you move the scissors closer to the light?" Puppet responds using the sentence pattern, and students decide if its response is true or false. Turn the light on to verify the decision.

L/S 3. Shadowy Questions: Divide the class into two teams. The object of the game is to see which team can collect the most shadow cut outs. (Cut different shapes out of black construction paper.) Ask the first player on Team A a question using the sentence pattern. If s/he answers correctly, s/he receives a shadow. If the answer is incorrect, the first player of Team B tries to answer. Play for a specified time or until each team member has been asked one question.

L/S 4. Double Circle: Divide class into two groups by numbering off (one-two-one-two-etc.). Have all "ones" stand in a circle facing out. The "twos" form a circle around the "ones," with each "two" facing a "one." "Ones" ask questions, using the sentence pattern, of the "twos" facing them. After "twos" answer, they move one step to the right so they are facing a new partner. Continue in this manner until all students are back to their original partners. Repeat with "twos" asking questions of "ones."

S/R 5. Pocket Chart: Introduce the sentence patterns in print:

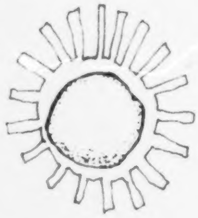
What happens if you move the | closer to the light source?

If you move the | closer to the light source the shadow gets

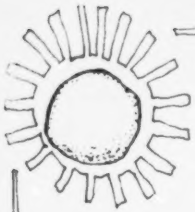
What happens if you move the | away from the light source?

If you move the | away from the light source the shadow gets

Set up a demonstration. Place the question strip in the chart with the appropriate word inserted. Read the strip with students.



What happens if you move the | pencil | closer to the light source?



Have students predict what the outcome of the demonstration will be. Ask for a volunteer to place the correct word cards in the sentence strip. Read the completed statement with the students. Proceed with the demonstration. Is the statement correct?

If you move the | pencil | closer to the light source the shadow gets | bigger

Repeat with many other examples.

R/W 6. True/False Worksheet: Prepare a worksheet with items as shown in the example below. Students must indicate if the statements are true or false. If they are true, they should write a correct statement.

E.g., What happens if you move a puppet closer to the light source?

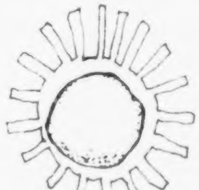
If you move a puppet closer to the light source the shadow gets bigger. (Students indicate that statement is correct.)

What happens if you move a pen closer to the light source?

If you move a pen closer to the light source the shadow gets smaller. (Students indicate that statement is false and rewrite the statement to make it true.)

Application

1. Shadow Play: Have small groups of students work together to develop a simple script for a shadow play. The play could use puppets, or the students can use their own bodies to cast the shadows. The plays should have at least one character that grows or shrinks. Practice the plays, then present them to other classes.



Lesson: **How Can You Change the Sharpness of a Shadow?**
(Grade Two)

As this lesson emphasizes language related to science concepts, you may wish to teach it during your Science period.

Science Concepts:

1. The sharpness of a shadow is dependent upon the relative positions of the object, light source and receiving surface.

English Vocabulary (*actually developed in this lesson)

* sharp/ sharper/ sharpest
* fuzzy/ fuzzier/ fuzziest
* closer to/closest to
* farther from/ farthest from

English Sentence Patterns (*actually developed in this lesson)

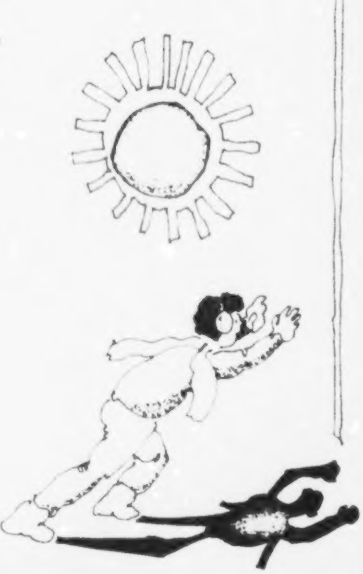
How can you make a shadow __________?
You can make a shadow __________ by __________.

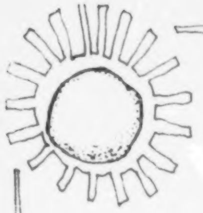
When is a shadow __________?
A shadow is __________ when __________.

* What happens when a shadow gets bigger/smaller?
* When a shadow gets bigger/smaller it gets fuzzier/sharper.

Special Materials Required

Light sources
Objects
Screen





Concept Development/Language Exposure

1. a) Have students experiment with making shadows larger and smaller. (See Concept Development activities from the lesson "How Can You Change the Size of a Shadow?") Ask students to carefully observe the shadows as they change. Discuss student observations: What happens when a shadow gets bigger? What happens when a shadow gets smaller?

   b) Introduce and discuss the terms "sharper" and "fuzzier." When does a shadow get fuzzier? sharper? Can a shadow get bigger and sharper at the same time? Can a shadow get smaller and fuzzier at the same time? Allow students to experiment with many different objects to determine the answers to these questions. Model the sentence pattern as you demonstrate with different objects: "When a shadow gets bigger it gets fuzzier," or "When a shadow gets smaller it gets sharper."

Language Practice

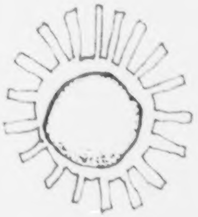
L 1. Stand Up/Sit Down: Students sit in their chairs and listen for a specified word (e.g., sharper, fuzzier). Say a series of words. When students hear the specified word for the first time, they stand up. When they hear it again, they sit down, and so on.

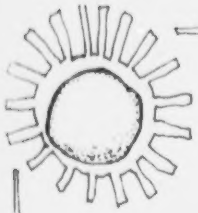
E.g., Listen for the word sharper: shaper, sharp, sharper, star, sharper, sharpen, etc.

L 2. Demonstration: Provide a light source, a screen and a variety of objects. Make a statement such as, "When a shadow gets smaller it gets sharper." Select one student to demonstrate the statement.

L/S 3. Association: Call out a word. Students respond with an accurate statement that uses that word. For example:

Teacher: "Bigger"
Students: "When a shadow gets bigger it gets fuzzier."



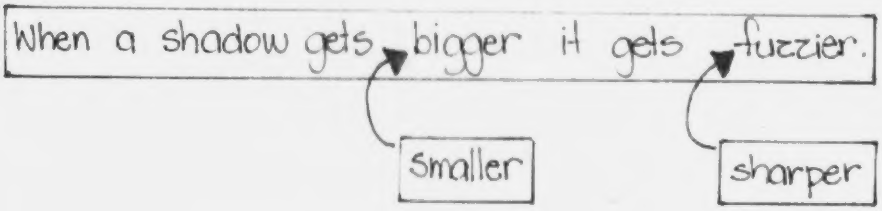


L/S 4. Gossip: Have students sit in a circle. Whisper one of the statements into the first student's ear. That student then whispers the statement into the ear of the student sitting beside him/her. When the statement has gone around the circle, the last student repeats it aloud. (This activity works best with several small groups rather than one large group.)

S/R 5. Demonstrate a shadow getting bigger. Ask students to describe what happens to the shadow using the sentence pattern. Show them how the sentence looks in print.

When a shadow gets bigger it gets fuzzier.

Demonstrate a shadow getting smaller. Ask students how to change the sentence to describe what happened to the shadow. Provide the necessary word cards and ask for a volunteer to place them in the correct positions.

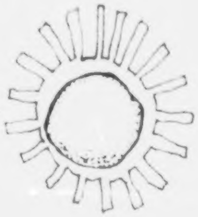


Read the new statement together.

R 6. Frizbee Baseball: Write statements on paper plates (frizbees). The pitcher throws a frizbee to another player who must catch it and read it. If s/he reads it correctly, s/he scores a hit. If not, it is a strike. Develop other rules with the class.

E.g., Three strikes out

Player must catch another frizbee to travel from first to second base.
Etc.



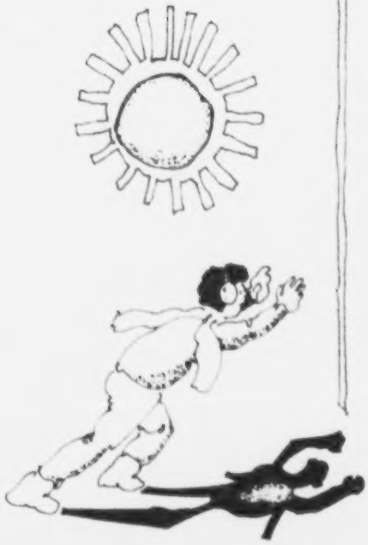
Application

1. Brainstorm with the class other things that get bigger/smaller, e.g., animal babies, candles, ice cubes, etc. Divide the class into groups and have each group develop several statements using the sentence pattern as models. For example:

   When a puppy gets bigger it gets hungrier.
   When an ice cube gets smaller it gets wetter.
   When a fire gets bigger it gets warmer.

   Students could illustrate each statement and write it on sentence strips for a bulletin board or make a book for the library.

2. Have students use their new-found knowledge to explain why the image from an overhead projector gets fuzzier/clearer as you turn the focus knob.



Lesson: **An Object Can Cast Different Shadows** (Grade Two)

As this lesson emphasizes language related to science concepts, you may wish to teach it during your Science period.

Science Concepts:

1. The shape of a shadow is dependent upon the relative positions of the object, light source and receiving surface.

English Vocabulary (*actually developed in this lesson)

- * straight
- * curved
- * round
- * cast
- * names of familiar objects

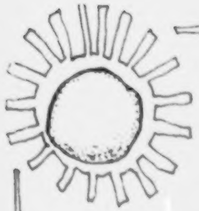
English Sentence Patterns (*actually developed in this lesson)

Can a _________ cast a _________ shadow?
A _________ can/can't cast a _________ shadow.

* What kind of shadow can a _________ cast?
* A _________ can cast a shadow that is _________.

Special Materials Required

Variety of familiar objects
Flashlights and screens (large sheets of white cardboard)
Shape cards
Vanishing drill worksheet



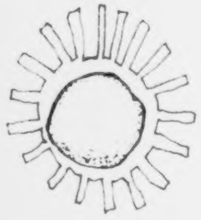
Concept Development/Language Exposure

1. Go on a "shadow shape hunt." Have students look for shadows that are round, curved or straight. Have them note what the object that casts each shadow looks like. Discuss findings: Does a straight object always cast a straight shadow? Does a round object always cast a round or curved shadow? Etc.

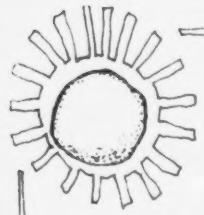
2. a) Divide class into small groups. Provide each group with a flashlight, a screen and a variety of objects, both large and small (hula hoop, umbrella, broom, garbage can lid, ball, cardboard tube, ruler, roll of tape, etc.). Have students select an item, predict what shape its shadow will be, and then test their prediction. Have them move the object, the flashlight and/or the screen* to try to make as many different types of shadows as they can with each object. Have each group report to the class about their experiments. Examine and discuss the results. (*By curving the screen, students will discover that straight objects can cast curved shadows.)

b) Hold up one object that students used in the previous experiments. Hold up one of the shadow tracings made of that object and describe it using the sentence pattern, for example, "A tape roll can cast a shadow that is round." Describe the other shadows made by the objects in the same manner. Record the information on a chart such as the one shown below.

	● Round	(Curved	▌ Straight
Tape roll	✓	✓	✓
Ball	✓	✓	X



Repeat with other objects used in #2a).



Language Practice

L 1. Shadow Scramble: Give each student one of the shapes (i.e., round, curved or straight) drawn on a card. Students sit on chairs arranged in a circle. Call out a statement such as, "A ball can cast a round shadow." All students holding a card showing a round shape must switch places. Occasionally, the teacher should say, "Shadow scramble!" Then everyone must switch places.

L 2. True and False Chairs: Place two chairs at the front of the room. Label one TRUE and the other FALSE. Divide class into two teams and have them stand in lines facing the chairs. Make a statement using the sentence pattern. The first player from each team races to get to the correct chair and sits down. Allow students to refer to the chart that was made in CD#2b).

L 3. Mumbo Jumbo: Make up riddles about the various objects. Use the words "Mumbo Jumbo" in place of the object's name. Students must guess what the "Mumbo Jumbo" is, for example:

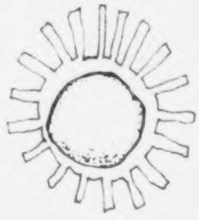
A mumbo jumbo can cast a round shadow.
A mumbo jumbo can cast a curved shadow.
A mumbo jumbo can bounce.

When students have guessed what the object is (a ball), teacher models the sentence pattern:

"A ball can cast a round shadow."
"A ball can cast a curved shadow."

Do this as a speaking activity by having students make up their own riddles and later as a reading/writing activity by having each student write down one riddle and exchange it with a partner.

L/S 4. Chain Drill: Distribute objects to students and have them sit in a circle. Begin by holding up your object and asking the first student, "What kind of a shadow can a ____________ cast?" Student refers to chart from CD/LE #2b) and responds using the sentence pattern, "A ______ can cast a ____________ shadow." That student then holds up his/her object and asks the question of the next student. Continue until all students have had an opportunity to ask and answer a question.



S/R 5. a) Pocket Chart: Place the sentence strip shown below in the pocket chart. Insert the name of one of the objects in the blank. (You may wish to make a small illustration of the object on the card as well.) Read the question to students and ask for their responses. Record responses on sentence strips and place these below the question in the pocket chart.

ball ⊘

What kind of shadow can a ______ cast?

A ______ can cast a round shadow.

ball ⊘

A ______ can cast a curved shadow.

Repeat with several other objects.

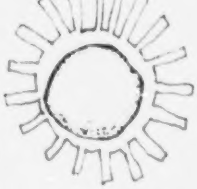
b) Place a series of statements in the pocket chart that describe the shadows made by one object. Students must read the statements, then choose the question that goes with them. For example:

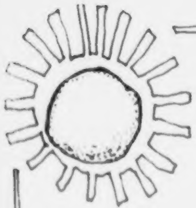
A ______ can cast a round shadow.

A ______ can cast a curved shadow.

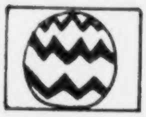
A ______ can cast a straight shadow.

What kind of shadow can a taperoll cast?



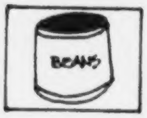


W 6. Worksheet: Prepare a worksheet using the vanishing technique. Use only objects from the Concept Development activities, and allow students to refer to the chart prepared in CD#2b). For example:



A ____ can cast a ______ shadow.

A ____ can ___ a ______ ______.



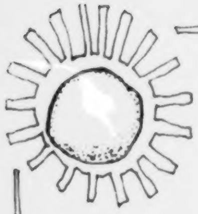
A ____ can cast a ______ ______.

A ____ can ____ a ______ ______.

A ____ can ____ __ ____ ______.

Application

1. Have each student make shadow tracings for a "What Am I?" bulletin board. They should choose familiar classroom objects, but should make the shadows more difficult to identify by shining the light from different angles. Have them trace around the shadows on black paper, cut them out and place them on the bulletin board. Number each tracing. Have students write the numbers on a piece of paper, and list the names of the objects by the appropriate numbers. Let them check their answers by watching students make the real shadows.



Lesson: **Shadows From Multiple Light Sources** (Grade Two)

As this lesson emphasizes language related to science concepts, you may wish to teach it during your Science period.

Science Concept:

1. Multiple light sources produce multiple shadows.

English Vocabulary (*actually developed in this lesson)

- * light sources
- * shadows

English Sentence Patterns (*actually developed in this lesson)

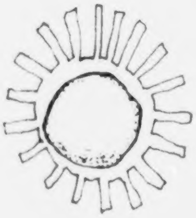
* How many shadows will there be if there are __________ light sources?

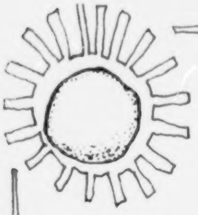
* If there are __________ light sources, there will be __________ shadows.

Special Materials Required

Several flashlights/screen

Cards depicting objects and varying numbers of light sources





Concept Development/Language Exposure

1. Place a pencil in a lump of plasticene and set it on a sheet of white bristol board. Have one student shine a flashlight on the pencil. How many shadows can students see? Now have another student prepare to shine a second flashlight on the pencil. Ask students, "How many shadows will there be if there are two light sources?" Model the sentence pattern. Repeat this process adding another flashlight each time you do so. Have students predict what will happen as they add each light source. Have them observe how each new flashlight makes another shadow. Record findings on a chart:

# of flashlights	# of shadows
1	1
2	2
3	3

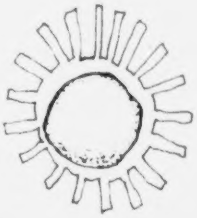
Model the sentence pattern several times using examples from the chart.

Language Practice

L 1. True/False: Ask questions of your C.A. (or a puppet) using the sentence patterns. Students indicate by a physical response if the responses are true or false.

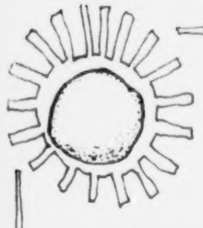
L 2. How Many?: Have students write numerals 1 - 10 on individual squares of paper. Ask a question and have students respond by holding up the appropriate numeral. Teacher then models the sentence pattern.

E.g., Teacher: "How many shadows will there be if there are five light sources?"



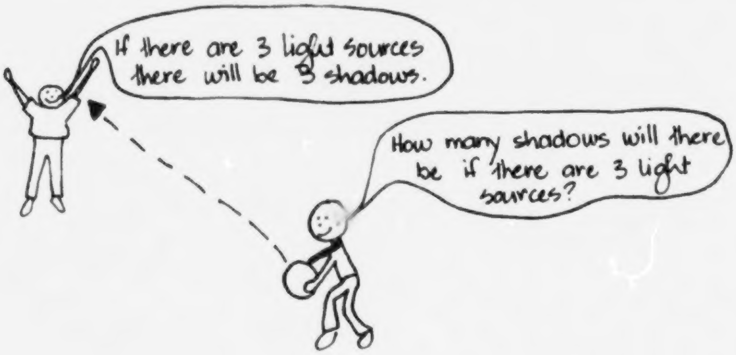
Students: Hold up card "5."

Teacher: "If there are five light sources, there will be five shadows."

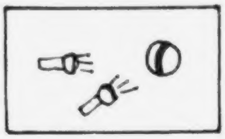


L/S 3. Ball Toss: Students form a circle. One student asks a question and tosses a ball to another player. That student must answer the question using the sentence pattern, ask another question, then toss the ball to another player.

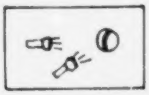
E.g.,


If there are 3 light sources there will be 3 shadows.
How many shadows will there be if there are 3 light sources?

S 4. Hot Potato: Students sit in a circle on the floor and pass around a picture card showing X light sources and an object. Students pass the card as music plays; when the music stops, the student holding the card asks, "How many shadows will there be when there are X light sources?" The other students must respond using the sentence pattern. (After some group practice, have the student asking the question choose one student only to answer the question.)

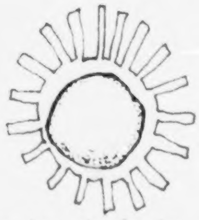


R 5. Pocket Chart: Using the same cards as in the previous activity, have students dictate questions and statements to accompany each card. Record these on sentence strips and place them in the pocket chart next to the card, for example:



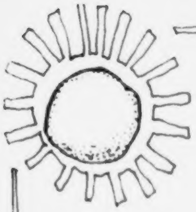
How many shadows will there be if there are two light sources?

If there are two light sources there will be two shadows.



Remove the strips from the pocket chart and distribute to students. Have them replace the strips next to the appropriate picture cards.

Cut the strips into words or phrases. Students reassemble the sentences.



R 6. Find Your Partner: Distribute question and answer sentence strips, one strip to each student. Each student must wander around the room searching for the person who is holding the corresponding question/answer to the strip s/he is holding. Upon finding each other, the students read their question/answer pair to the teacher.

R/W 7. Vanishing Drill Worksheet: Have students complete the worksheet individually or in pairs. You may wish to do an example together using the overhead projector. Be sure that models of the sentence pattern are available for easy reference.

E.g.,

If there are two light sources there will be ___ shadows.

If there are four ___ ___ there will be ___ ___.

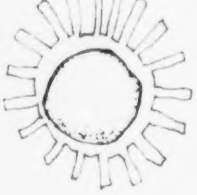
___ there are seven ___ ___ ___ will be ___ ___.

___ ___ ___ three ___ ___ ___ ___ be ___ ___.

___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___.

Application

1. Show students how to use several light sources during a shadow play. (i.e., For a crowd scene you could use only a few puppets and many light sources.) Have students choose a scene from a book or story to illustrate using this technique. (Millions of Cats by Wanda Gag would be a good choice.)



Lesson: **I Have a Little Shadow** (Grade Two)

As this lesson emphasizes language related to a poem, you may wish to teach it during your Language Arts period.

Science Concepts:

1. The sun's position in the sky changes during the day and makes shadows change.

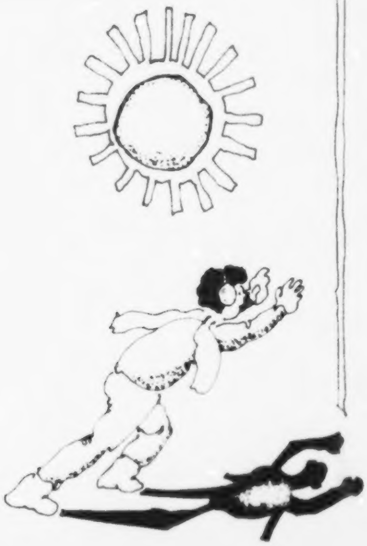
2. Shadows cast by objects standing still in sunlight move because the sun's position in the sky changes.

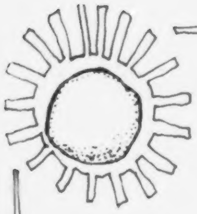
English Vocabulary (*actually developed in this lesson)

* shadow
* sleepyhead
* lazy
* silly
* proper

English Sentence Patterns (*actually developed in this lesson)

Special Materials Required





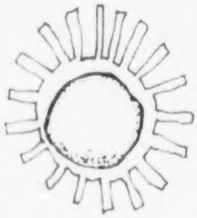
My Shadow

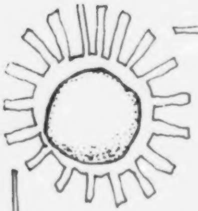
By Robert Louis Stevenson
(With some changes)
From A Child's Garden of Verses

I have a little shadow that goes in and out with me,
And what can be the use of him is more than I can see.
He is very, very like me from the heels up to the head;
And I see him jump before me, when I jump into my bed.

The funniest thing about him is the way he likes to grow -
Not at all like proper children, which is always very slow;
For he sometimes shoots up taller on the ground or on the wall,
And he sometimes gets so little that there's none of him at all.

One morning, very early, before the sun was up.
I walked along the river bank with my little pup;
But my lazy little shadow, like a silly sleepyhead,
Had stayed at home behind me and was fast asleep in bed.





Concept Development/Language Exposure

1. Have each student stand in a chosen spot on the playground. (Do this activity on a sunny day.) Trace around students' feet. Draw in the shadow (using powdered paint) and record the time. Every two hours throughout the day have students return to their footprints and draw in the shadows cast. When were the shadows longest? When were they shortest? When were they about the same height as the students? Did the shadows disappear at any time during the day? What direction did the shadows go in the morning? What direction did they go in the afternoon?

   Discuss the reasons for the changes in the students' shadows. At this point, it is enough to note that the sun's position in the sky changed; it is not necessary to discuss the earth's rotation as that will be dealt with in later lessons.

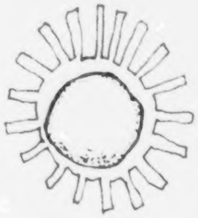
2. Recite the poem several times using actions to help students understand it. Each time you say the poem, ask students to listen for specific information:

   What things does the shadow do?
   Does the shadow grow slowly as a real child does?
   Where was the shadow when the child went for a walk along the riverbank?

   You may also wish to ask the students to think about reasons why the shadow behaves the way it does:

   Why does the shadow grow quickly?
   Why didn't the child see his shadow when he went walking on the river bank? Do you think the shadow was really sleeping in bed?

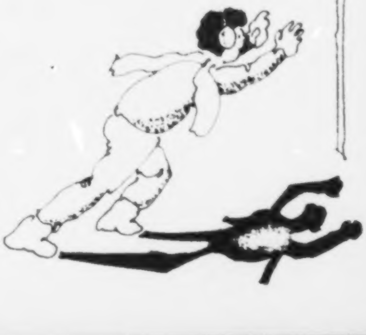
3. Use actions, pictures or objects to demonstrate the meaning of any phrase or words you think students might not understand. For example, demonstrate with a flashlight and an object how a shadow can be very small at one moment and then "shoot up taller."

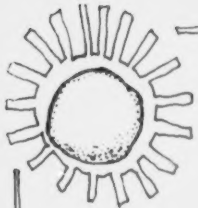


Language Practice

L 1. Recite the poem again a number of times, varying the way students participate as they listen:

   a) Have all students pantomime actions as you say the poem.
   b) Have students clap every time they hear a previously specified word.





L 2. Change Game: Divide the class into two groups with one student remaining. Assign each student in each group one of the phrases from the poem. (Be sure to give the students in Group A the same phrases as students in Group B.) Have students stand in two lines facing each other with the remaining student, IT, in the middle. When you say a phrase, the two students assigned the phrase attempt to change places before IT can take one of their places. If IT gets a place, s/he takes over the phrase and the unlucky runner becomes the new IT.

L/S 3. Choral Speaking: Have students join you in saying the poem, varying the ways in which they participate:

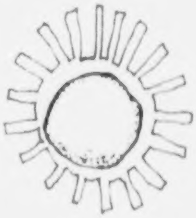
a) Teacher says one line. Students repeat it immediately.
b) Teacher says the first half of each line, students say the second half.
c) Teacher says one line, students say the next one.

S/R 4. Pocket Chart: Write each line of the poem on a sentence strip. As you chant the poem with students place the strips in the pocket chart. Do the following chart activities:

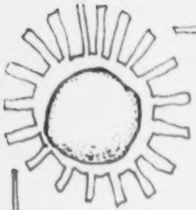
a) Have students point to specified words or phrases.
b) Have students match words or phrases to those in the pocket chart.
c) Remove sentence strips from the chart and distribute to students. As you chant the poem together, have students place the strips back in the chart in the correct order.
d) Cut sentence strips into phrases or words. Have students put them back together.

R/W 5. Overhead Projector: Write the poem on an overhead transparency leaving out words or phrases. Have volunteers come up to fill in the blanks. (Allow them to refer to a written model of the poem.) Give each student a similar activity as a worksheet.

R/W 6. Worksheets: Give students worksheets of some of the activities from #4:



a) Matching Sentence Halves: Cut and paste; draw a line connecting halves; or write out the completion.
b) Scrambled Sentences: Cut and paste; or write out the line in correct order.

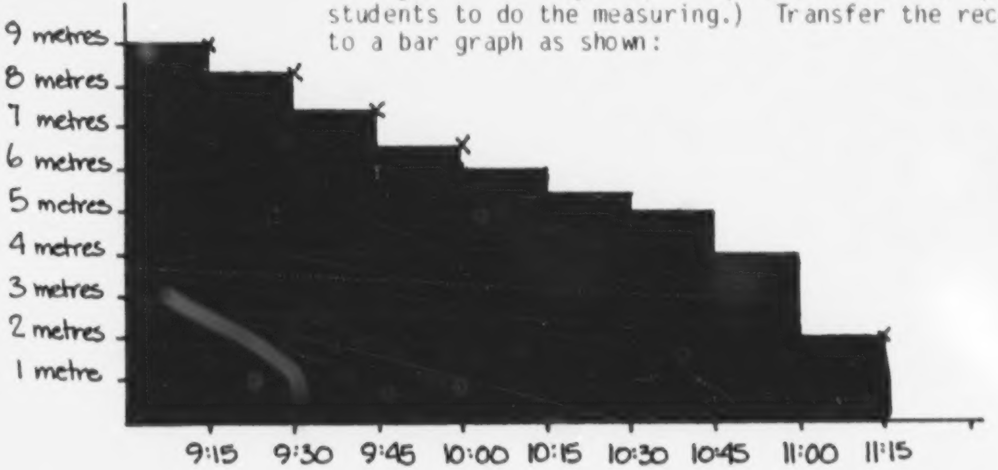


Application

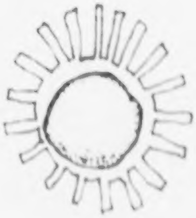
1. Have students keep a log of their shadows' "activities" over a 24 hour period. They should note times of day when they could/couldn't see their shadows, size of shadows at certain times of day, etc.

Time	How My Shadow Looked
10:00 a.m.	Taller than me
noon	Smaller than me
Etc.	

2. Place a stick upright in the ground (or supported by rocks) in a sunny area of the playground. Measure the stick's shadow. Record the time at which students took the measurement and the length of the shadow. Have students predict where the shadow will fall in 15 minutes and whether it will be longer or shorter. Measure the length of the shadow every 15 minutes throughout the day. (Set up a schedule for pairs of students to do the measuring.) Transfer the recordings to a bar graph as shown:



Discuss how the length of the shadow changed over the day. Compare the lengths recorded to the actual length of the stick. When was the shadow shorter than the stick? When was it longer? When was it the same? Did it ever disappear?



Variation of Activity:

Put a toothpick in a lump of plasticene and set it on a piece of cardboard. Set it in a sunny place. Trace over the shadow at regular intervals and note the time of each tracing. Discuss the results.

Culminating Activities - Grade Two

1. Theme Notebooks: Have students design their own covers for their Shadow Notebooks. The notebooks may include poems about shadows, descriptions of experiments the class did during the unit, pictures, craft projects, worksheets, etc. that are related to the shadow theme. It is important to allow students to choose what they will put in their notebooks. The notebooks are their personal records which they may take home to share with family and friends.

2. Divide class into groups of four or five students. Have each group choose a favourite story or legend which they will present as a shadow puppet play. Introduce students to various methods of making shadow puppets. (See Resource list for books about shadow puppets.) After making the puppets, have students practice the play. Encourage them to experiment with lighting, moving puppets closer to or away from the light, curving the screen, etc. When students feel confident enough to perform the play, have them present it first to the rest of the class, then to other classes or to members of the community.

3. Create a chart story in newspaper format (with bold headlines, narrow columns, etc.) reporting the observations and results of the experiments conducted during the unit. Give your newspaper a name, for example, "The Shadowy Affairs of Grade Two." Copy the chart onto a stencil so that you can make a copy for each student to include in his/her theme notebook.

4. Make a class book about shadows using a frame sentence, for example:

   Shadows can be _________.

Brainstorm words that could be used to fill in the blank. Now brainstorm antonyms for these words, for example:

big/small
long/short
funny/scary
etc.

fancy/plain
fat/thin

Extend the sentence pattern to include both words, for example:

> Shadows can be long or short.

Use a polaroid camera to take photos of shadows to illustrate each word.

Evaluation Activities - Grade Two

It is important to assess what your students have learned during this unit. The following activities evaluate language and concepts. There are additional evaluation ideas and record keeping forms in the booklet Evaluation Guidelines for the Language Development/Science Units.

You can do these activities orally (in small groups or with individuals) to test listening and speaking or on paper to test reading and writing. These are only suggestions; you can substitute different content or vocabulary items to make them more appropriate for your students. You probably will want to include many other activities as well.

1. Tell or give the students sentence beginnings to match to sentence endings.

You can make a shadow bigger by	moving the object away from the light.
You can make a shadow sharper by	moving the object away from the light.
You can make a shadow fuzzier by	moving the object closer to the light.
You can make a shadow smaller by	moving the object closer to the light.

2. Tell or give the students the beginning of a sentence and a number of possible sentence endings. They indicate which sentence endings are appropriate for the sentence beginning.

If the light source is behind the object

a) the shadow will be beside it.
b) the shadow will be behind it.
c) the shadow will be in front of it.
d) the shadow will be close to it.

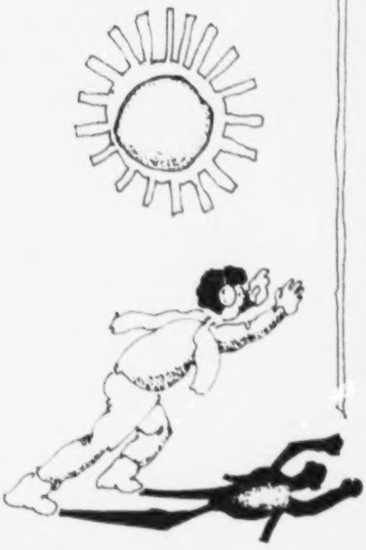
If there are three light sources there will be

a) a few shadows.
b) two shadows.
c) three shadows.
d) a dark shadow.

A roll of tape can cast

a) a straight shadow.
b) a square shadow.
c) a round shadow.
d) a curved shadow.

3. Have students pretend that they met someone who had never seen a shadow. How could they describe a shadow to the person? Have students dictate or write a short set of instructions which someone could follow to produce a shadow using simple equipment.



INITIAL ASSESSMENT ACTIVITY - Grade Three

The following activities should be done before you teach any of the lessons. They will assist you to determine:

1. what students already know about the concepts of the topic and therefore where instruction should begin;
2. what interests students have in the topic and therefore the direction the unit should take; and
3. what language students already have to discuss the topic and what language they require.

One of the basic principles of the Language Development Approach and of all good teaching is that you should start with the student when planning and carrying out a unit. Before you begin to teach, it is important to assess your students' knowledge of and interest in the topic. You should determine what students already know about the topic/concepts you intend to cover. What ideas do students already have? What misconceptions do they have which you must address? What gaps are there in their knowledge which require that you teach certain lessons? What concepts do they know well enough so that you can skip the lessons which teach those concepts? What questions do they have? What relationships do they see between different aspects of the topic?

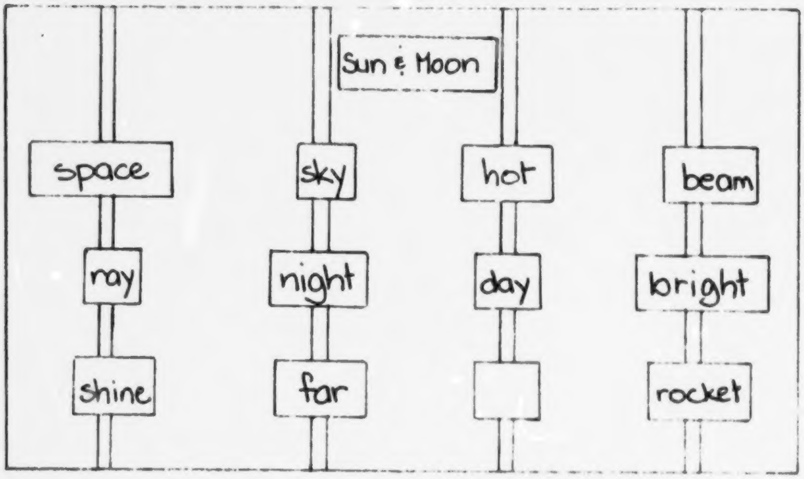
It is also important to identify what experiences students have which relate to the topic/concepts. By identifying these and building upon them in the lessons you can help students relate the new ideas and information to their own lives. It is important to do this because it assists students to internalize new concepts. It helps students make the concepts part of the conceptual framework which they use to understand and describe their world. If they do not have concrete, firsthand experiences to relate to each concept you will have to provide them wherever possible.

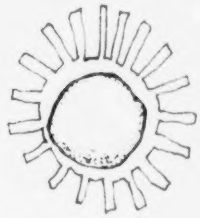
Another use for these activities is to help you identify particular interests of individuals, groups of students, or the whole class. You can then include activities in the lessons which involve student interests, thereby increasing motivation for them to participate and leave. You may decide to add, substitute or omit some lessons because of students' interests.

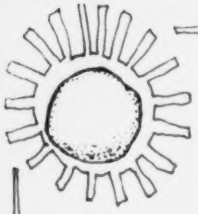
These activities will also help you determine what language students have to discuss the topic. You can find out what vocabulary items students already know and what associations they have for each word. It is important to ascertain the meanings students attach to words; sometimes their interpretations may surprise you! If they do not clearly understand terms or they use the incorrectly, it will prevent them from understanding and incorporating the concept into their mental framework.

1. Brainstorming:

Look at pictures of the sun and moon. Ask students to tell you words that come to mind immediately. Ask them to tell you what they know about the sun and moon. Record their answers on cards and hang them on masking tape strips (sticky surface up) which you fasten to the wall or the chalkboard.







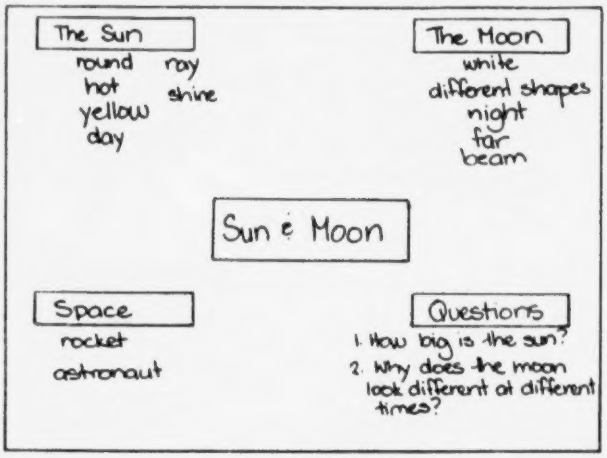
If students have difficulty with this activity you may wish to direct their thinking or prompt ideas by asking more specific questions.

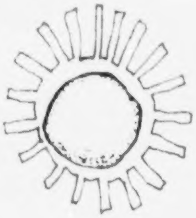
E.g., "How big is the sun?"
"How far away is the moon?"
"What shape is the moon? What colour is it?"
"Can people go to the moon? How?"

Encourage students to predict answers to these questions even if they aren't sure of the exact responses. It might be interesting to record their predictions separately and compare them to the actual answers as you study the unit. Students may think of their own questions as well. Keep a list of all the questions the class cannot answer to focus the lessons you teach during the unit.

After you record their responses on cards have students chant the words with you. Talk about the words: Which word is the most interesting? the least? the most puzzling? What other word can you think of that means almost the same thing? What comes to your mind when I say ______? What do you think this word means? Etc.

Transfer the words to a flowchart to provide a permanent reference. As you teach the unit you may wish to add new information to the chart. You may also identify new questions and, hopefully, the answers. At the end of the unit you can review the chart with students.
Keep it as a reference for future use.


The Sun
round
hot
yellow
day
ray
shine
The Moon
white
different shapes
night
far
beam
Sun & Moon
Space
rocket
astronaut
Questions
1. How big is the sun?
2. Why does the moon look different at different times?



SAMPLE QUESTIONS

You can use these questions during the Initial Assessment activity to determine what experiences, language, and knowledge students have about the topic. You can also use the questions for assessing thinking processes throughout the Concept Development and Application phases of each lesson and during the Culminating and Evaluation activities.

QUESTIONS FOR ASSESSING EXPERIENCE:

1. Have you been in a situation where __________?
2. What do you know about __________?
3. Have you ever seen __________?
4. Have you ever experienced __________?
5. Have you ever been __________?
6. Have you ever done __________?
7. Has something like this ever happened to you?
8. When was the last time you __________?

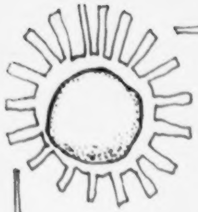
QUESTIONS FOR ASSESSING LANGUAGE:

1. What do you think these words mean?
2. Can you give me another word that means __________?
3. What comes to your mind when I say __________?
4. Have you heard of the word(s) __________?
5. What words can you think of when I say the word __________?

QUESTIONS FOR ASSESSING THINKING PROCESSES:

Cognitive Memory (details, information)

1. Who . . . . ?
2. What are the facts?
3. What are the most important details?



4. What is the . . . .?
5. What do you mean by . . . .?
6. What is your interpretation of what happened? (What do you think happened?)
7. When?
8. Where?

CONVERGENT/GENERALIZING (getting the main idea)

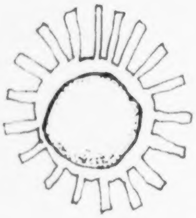
1. What are the chief points?
2. Given that information, what is the main idea?
3. What is the single, most important idea?
4. State the idea in one sentence.
5. Explain __________.

STRUCTURING/RELATING (arranging relationships)

1. Categories: Which group does that belong to?
   How would you classify . . . .?
   What type would you . . . .?
2. Comparisons: How are they alike? same? similar? identical?
3. Contrast: How is it different? in opposition to? unlike?
4. Cause and Effect: What will happen if? Why?
   What will happen as a result of?

DIVERGENT/USING/APPLYING

1. What might happen if?
2. If you use that idea, what would it mean for __________?
3. Apply that idea to our (this) situation.
4. What would result if __________?
5. If you were given these facts, what would you do to __________?



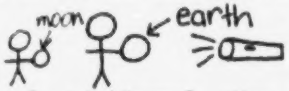
6. How would it be different if we used this idea?
7. What could the advantages/benefits be if we applied this idea/process?
8. What do you think the (story/paragraph) will be about?

EVALUATION/JUDGING/VALUING

1. How do you feel about this idea?
2. What is your opinion?
3. What is the best _________?
4. Are you satisfied with that answer/plan?
5. Can this statement be made? Why?
6. Out of all the information, what can be used to prove your point?
7. How would you judge?
8. What is your opinion or conclusion about the product/plan/ idea?
9. Why did you think it worked/didn't work?
10. What is fact? What is opinion?

Science/Social Studies

*1. Stick a small paper figure to your community's location on a globe. Darken the room. Shine a flashlight at the globe. How much of the globe is in darkness? In light? Rotate the globe once (very slowly) and watch the figure. What happened? When it is daytime in your community, where is it nighttime?
2. Look at the moon through binoculars. Can you see any mountains? Craters?
*3. Darken the room. Shine a light on a white ball. Pretend it is the moon. Shine the light away from the moon. Can you see it now? Explain that the moon does not produce its own light. You can only see it when the sun's light shines on the moon and is reflected to earth.
*4. Arrange students as shown. Move the moon slowly around the earth. When can you see a full moon? a half-moon? other shapes?



Teacher's Notes

These are possible activity ideas for this topic. They can be used in lessons you make up, as enrichment activities, or as learning centre activities. Most can be done in any language. Activities with an * are actually used in the sample lessons which follow. Spaces have been left for you to record your own activity ideas.

Science/Social Studies (con't)

*5. Make a large calendar. Draw the shape of the moon for today. Predict what shape it will be tomorrow. Each day draw the shape of the moon. Include other observations (e.g., colour, brightness, size, etc.).
6. Research the use of the moon as a calendar and as an indicator of weather.
7. Make simple sundials.

ACTIVITY IDEAS

TOPIC D: SUN, MOON AND EARTH

Math

*1. Place pictures of the moon's phases in sequence.
2. Review/teach fractions using the moon's phases as a reference.
3. Introduce/review use of midnight, noon, a.m. and p.m.
4. Record the times of sunrise and sunset every day for a specified period. Graph the hours of sunlight for each day.

Language Arts

1. Make a collage of words that describe the moon (cut words from magazines). Arrange them on a paper to make a poem.
2. Write similes about the sun and moon. For example: The sun is as ______ as __________. The moon is like __________.
3. Have students write about going to the moon: Why would you like to go? What would you take? What would you do on the moon?
4. Write diamente poems about the sun and moon. E.g.,

Sun
Golden, bright
Warming our days
Up in the sky
Lighting our nights
Silvery, pale
Moon

5. Have students write and illustrate a "Moon Manual" offering tips on how to survive on the moon.
6. Write a letter to the "man in the moon."

Music, Poems, Stories

*1. Happy Birthday, Moon
2. "Last Song"
3. "Early Morning"
4. "I Love the Moon"
5. "Oh Mister Moon"
6. "Goodnight, Mr. Beetle"
7. "The Sun"
8. "The Moon"
9. "Satellite, Satellite"
10. "The Sun"
11. "Good Morning Clouds"
12. "The Soccer Ball Sun"
13. "The Sun"
14. "Moon Song"
15. "Moon-In-Water"
16. "Moon-Catchin' Net"
17. "Flying"
18. "The Moon's the North Wind's Cooky"
19. "The Wind and the Moon"
20. "I See the Moon"

Art

1. Night and Day Collage: Join a light and dark piece of construction paper end to end. Students cut night and day pictures from magazines and paste them on the appropriate sides.
2. Draw pictures of things you would do on the moon.
3. Cut moon or sun shapes on potato halves. Press in paint and stamp designs on paper. Make greeting cards or wrapping paper.
4. Pre-cut stencils of the various moon phases. Students use these for spatter painting.
5. Look through books and magazines to find various representations of the sun. Have students design their own stylized suns. Do the same with the moon.
6. Make soft sculpture mobiles of sun, moon and stars.
7. Make paper plate suns: Decorate the paper plate with scraps of yellow/orange/red tissue paper. Add paper strips for the rays.

Physical Education/Movement

1. Students stand in a circle facing outwards and holding hands. Put candle or flashlight (the sun) at one end of the room. Darken the room. Tell students that they are the earth and must rotate slowly as the earth does. As music plays they begin to turn. When the music stops, those students who are facing the sun pretend to do daytime activities; those facing away from the sun pretend to go to sleep. When the music begins again, the circle reforms and rotates again.

Special Activities

1. Make sugar cookies shaped like the sun, the moon and the stars.
2. Set up a "Space Centre." Include: photographs of space, astronauts, rockets, etc.; Lego space block sets; models of planets, sun, moon, earth; junk materials to construct spaceships, planets, etc. Have students: write letters to NASA requesting information; write comic strips about a space adventure; write a list of questions to ask of an astronaut; view movies and filmstrips about space; paint a space mural; read about UFO's; design creatures from outer space; etc.

Lesson: **Day and Night** (Grade Three)

As this lesson emphasizes language related to science concepts, you may wish to teach it during your Science period.

Science Concepts:

1. The rotation of the earth causes day and night.
2. Day and night are regular events.

English Vocabulary (*actually developed in this lesson)

* day/daytime	* place names
* night/nighttime	

English Sentence Patterns (*actually developed in this lesson)

* When it is __________ in __________, it is __________.

When the sun rises in __________, it sets in __________.

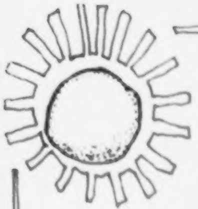
Special Materials Required

Pictures of day and night

Ball

Globe

"Herman's Head"



Concept Development/Language Exposure

1. a) Look at pictures of day and night. Ask students to think about what causes day and night. Why don't we get light from the sun all the time? Discuss students' ideas and tell them that you will do an activity that may help them to understand what causes day and night.

   b) Darken the room except for a single electric light. Fasten a ball to a piece of string. Hold the string and move the ball so that it is 1 metre from the light. Have students observe the ball carefully: How much of the ball is in the light? How much is in shadow? What is making the shadow?

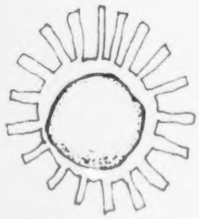
Repeat the activity with balls of different sizes. Do they all have the same amount in light and in shadow? Does the amount of light and shadow change when you turn the ball around?

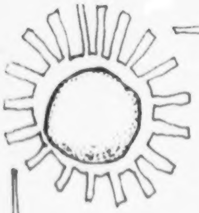
Repeat the activity with a globe. Observe how much of the globe is in light and how much is in shadow. Place a small piece of plasticene on your community's location and stand a toothpick in it. Rotate the globe so that the light is shining on the toothpick. Is your community in light or shadow? Is it day or night? Rotate the globe slowly and have students focus their attention on the toothpick. What is happening? Can they see a shadow of the toothpick? What is happening to the shadow? Make day turn to night in your area. Have students note where it is day on the globe now. Model the sentence pattern several times: "When it is daytime in __________ it is nighttime in __________."

Rotate the globe so that your area is now in shadow. Where is it daytime now?

Model the sentence pattern: "When it is nighttime in __________ it is daytime in __________."

2. Herman's Head: (See J. MacDiarmid's Activities For Skill Development). Tape a telephone conversation leaving blank spaces for the teacher's responses. The telephone conversation should take place with someone living in a country that is opposite your location on the globe. During the conversation, attempt to focus attention on the concepts of day and night, the earth's rotation, and the relationship between sunset in one place and sunrise in another. Attempt to use the sentence patterns throughout the conversation.





Language Practice

L 1. "I'm Going to Australia": Use the globe from the CD activities. Place your finger on a location and use the sentence pattern to make statements about your trip. Students look at the globe and decide if your statements are true or false. For example:

"I'm going to Australia, When it is nighttime in Australia, it is day time in Coppermine. When it is daytime in Australia, it is nighttime in Coppermine."

Repeat with names of other countries and cities.

L/S 2. Substitution Drill: Teacher makes a statement, then provides a word for students to substitute. For example:

Teacher: "When it is daytime in Arctic Bay, it is nighttime in China. India."
Students: "When it is daytime in Arctic Bay, it is nighttime in India."

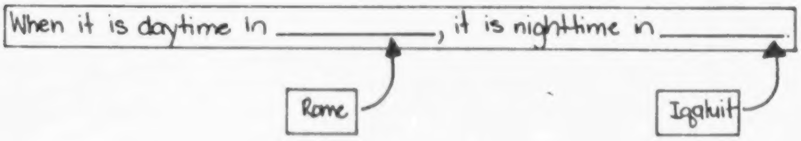
You may wish to point to places named on the globe.

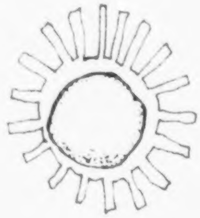
L/S 3. Sentence Completion: Teacher begins by making a statement. Student must refer to the globe and complete the statement. Other students listen to determine if student is correct. For example:

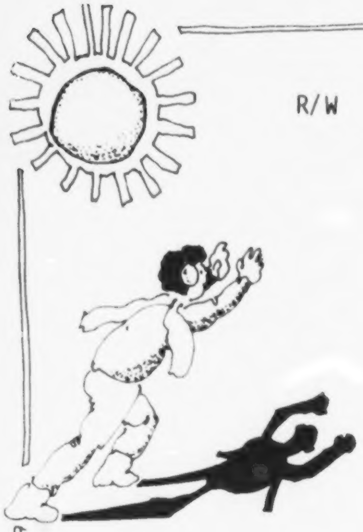
Teacher: "When it is nighttime in Clyde River, it is daytime in ________.
Student: "When it is nighttime in Clyde River, it is daytime in China.

R 4. a) Pocket Chart: Prepare several sentence strips of the sentence pattern. Repeat activity #3; focus students' attention on the printed form. Write the names of the two places mentioned on word cards and insert in the appropriate positions.

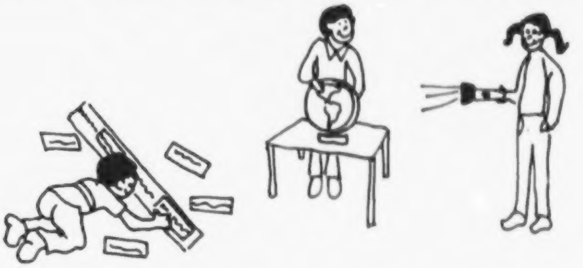
Repeat several times.


When it is daytime in ________, it is nighttime in ________.
Rome
Iqaluit

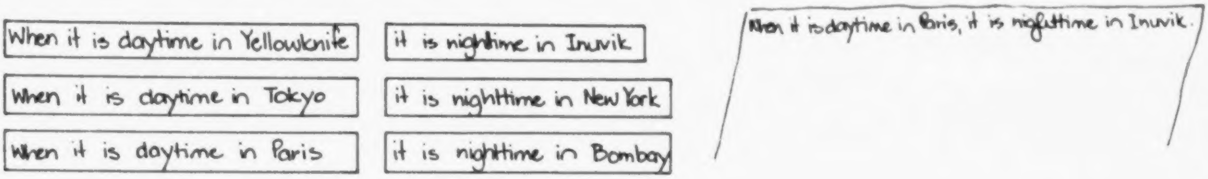




R/W b) Divide class into smaller groups. Provide each group with a globe, light source, sentence strips and blank word cards. Have them make statements using the strips and writing place names (as located on the globe) on the blank cards. Have them copy the statements onto paper. When they present these statements, the rest of the class should decide if they are true or false.



R/W 5. Fractured Sentences: Students match correct halves of sentence strips. They could then copy these onto paper as a writing activity.



When it is daytime in Yellowknife | it is nighttime in Inuvik
When it is daytime in Tokyo | it is nighttime in New York
When it is daytime in Paris | it is nighttime in Bombay

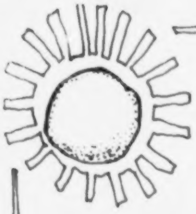
When it is daytime in Paris, it is nighttime in Inuvik.

Application

1. Provide students with play (or disconnected) telephones. Have them carry on conversations with each other, pretending that they live on opposite sides of the earth. Tape their conversations.

2. Write silly stories telling where the sun goes at night. Brainstorm ideas with the class.

   E.g., It goes to bed.
   It puts on flannel pyjamas.
   It gets turned off by the man in the moon.



Lesson:
The Sun and The Moon Appear To Move Across the Sky
(Grade Three)

As this lesson emphasizes language related to science concepts, you may wish to teach it during your Science period.

Science Concept:

1. The rotation of the earth explains why the sun appears to move across the sky.

2. The rotation of the earth explains why the moon appears to move across the sky.

English Vocabulary (*actually developed in this unit)

* sun
* earth
* moon
* sky
east
west

* move/s
* turn/s

rises
sets

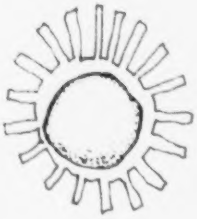
English Sentence Patterns (*actually developed in this lesson)

Where does the sun __________?
The sun __________ in the __________.

Does the __________ move?
Yes, it does.
No, it doesn't.

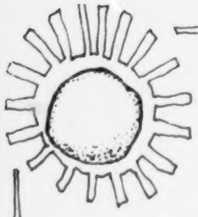
Why does the __________ appear to move across the sky?
The sun appears to move across the sky because __________.

* Why does it look like the __________ moves?
* It looks like the __________ moves because __________.



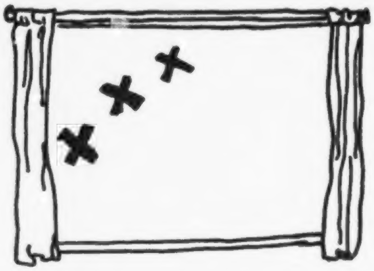
Special Materials Required

Globe
Light Source
Herman's Head
Photographs of earth taken from space
Yellow balloons or balls



Concept Development/Language Exposure

1. Record the position of the sun by fixing tape to the window as the sun "moves" across the sky.

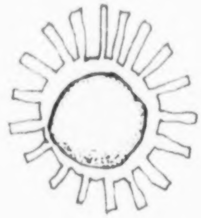


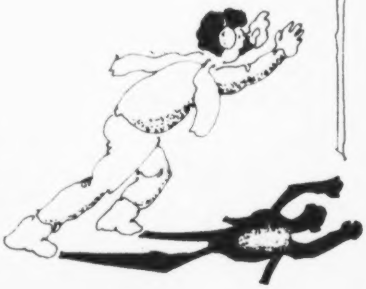
Discuss the results with students: "What happened to the sun's position?

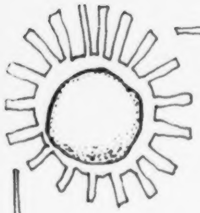
Why do you think this happened?"

2. Go outdoors on a sunny day. Hammer a stick into the ground (or support it with rocks) and mark where its shadow falls. Mark the shadow again in about 15 minutes, 30 minutes, 45 minutes and an hour. What happened to the shadow? Why? (Review concepts developed about how shadows change: the position and size of a shadow depends on the position of the light source and the position of the object casting the shadow.) Did the shadow change because the stick moved? the sun moved? both of them moved? Ask students to consider what would happen if the whole earth was moving. Would that make the shadow change? Help students to visualize this by demonstrating the following:

> Place a globe on a table. Stick a lump of plasticene in the middle of the globe and put a pencil in it. (Tell students that the pencil represents the stick that you stuck in the ground.) Darken the room and shine a lamp or flashlight on the globe. Turn the globe slowly and watch the pencil and its shadow. What happened to the shadow as the globe moved? When did the shadow disappear? Did the "sun" move? Did the "stick" move? Is everything on the earth moving?
>
> Explain to students that it is very difficult to tell whether you are moving or something else is moving. To demonstrate this point, have students sit in a vehicle and look out at another vehicle right beside them. If one vehicle moves, is it easy to tell which one is moving? Do you sometimes get fooled?







3. Have students observe the moon every half hour for a few hours. Have them choose a reference point such as the top of a tree or pole. If they stand in the right spot, the moon will seem to touch this point. Have them mark the place where they are standing. They should stand on the same spot every time they make an observation. Have students predict what will happen. Discuss what students observed. Does the fact that both the sun and the moon change position suggest that the earth is moving?

4. Optional Activity for More Proficient Students

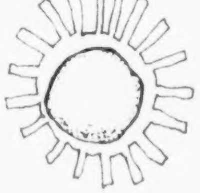
   a) Look at photographs of the earth that have been taken from space. What things do you see in the pictures? (The earth is round; land and water; clouds.) Tell students that scientists have studied photographs like these and have noticed that the clouds form swirls around the earth. (Familiarize students with the concept of swirls - look inside a glass marble, make swirls in fingerpaint, etc.) These swirls help to prove that the earth is moving.

   b) Cut a circle (10 cm radius) from cardboard. Push a stick through the centre of the circle. Put several drops of water on the cardboard next to the stick. Tilt the cardboard so that the water runs down across it. Is the water's path straight or curved? Repeat this a few times. Does the same thing happen?

   Now, try turning the cardboard while the water runs down. How is the water's path now? Repeat with variations: put the water in different places; tilt the cardboard only a little; tilt the cardboard a lot; turn the cardboard in different directions; turn the cardboard at different speeds. Discuss observations.

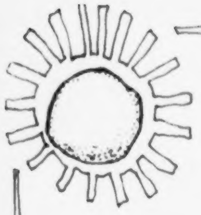
   Explain to students that moving air would tend to do the same thing as moving water. The clouds mark the paths of the moving air.

4. Use the Herman's Head technique to expose students to the sentence patterns and vocabulary: Decorate a box to look like a person's head (in this case you may wish to make it look like an astronaut). Place a tape recorder inside the box. Prepare a tape with blank spaces on it so that when you play it, you can "talk" to the tape. For example:



Teacher: "Herman, somebody told me that the sun doesn't really move. I watched it all day today and it didn't stay in the same place in the sky."

Herman: "Well, I know that when you watch the sun, it looks like it moves, but really it doesn't move at all."



Teacher: "Then why does it look like the sun moves?"
Herman: "It looks like the sun moves because the earth is turning."
Etc.

Language Practice

Bail Out: Arrange chairs in a circle. Have students sit on them and pretend they are astronauts sitting in their space ships. Teacher makes statements. When "astronauts" hear a false statement they "bail out" and find a new space ship.

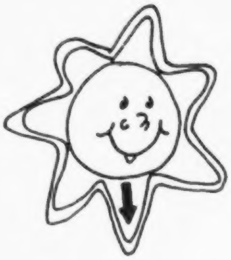
E.g., Teacher: "It looks like the sun moves because the earth is turning."

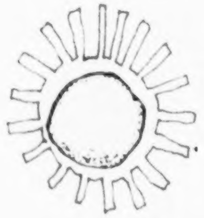
"It looks like the sun moves because the sun is bouncing."

(Students find a new seat.)

L/S 2. Sun Relay: Use two large yellow balloons or balls as suns. Have students form two teams and stand in straight lines. Students pass "sun" over their heads and between their legs as teacher makes a statement. The last team finished must repeat the statement. This may also be done using white balls or balloons to represent the moon.

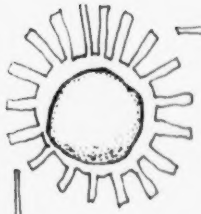
L/S 3. Sun Spinner: Make a sun spinner as shown below. Say a statement, then spin the spinner. Whoever the spinner points to repeats the statement.





L/S 4. a) Oral Cloze: Say the beginning of a statement. Students provide the missing word/ phrase. For example:

Teacher: "It looks like the sun moves because the earth is ____ ."
Students: "Turning."



Teacher: "It looks like the sun moves because the ___.
Students: "Earth is turning."
Teacher: "It looks like the sun moves."
Students: "Because the earth is turning."

Make a sentence strip as shown:

It looks like the sun moves because

Have students brainstorm endings, either factual or silly. Record these on sentence strips. Put sentence strips together to make complete sentences. Have students read them and decide if they are true or false.

It looks like the sun moves because

the earth moves

we can't see

the world turns

b) Copy the sentences onto small strips of paper. Place strips inside yellow balloons and inflate. Throw the balloons up in the air and have students attempt to catch them. Any student who does get a balloon must pop it, read the message inside, and state whether it is true or false.

Repeat with statements about the moon.

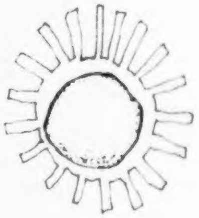
Application

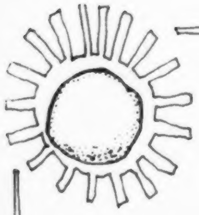
1. Have students use paints or pastels to make pictures of sunrises and sunsets. Discuss these terms:

   Does the sun really rise and set?
   What actually happens?

2. Have students refer to books, filmstrips, pictures, etc. to gather information about the moon:

   What does the moon look like?
   When did man first go to the moon?
   Who was the first man on the moon?
   Etc.



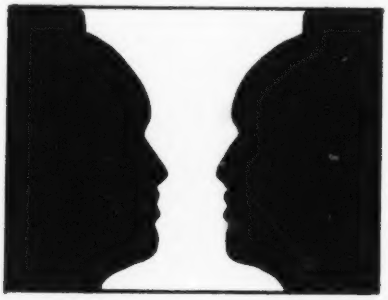


3. Use papier maché to make scale models of the sun, earth and moon.

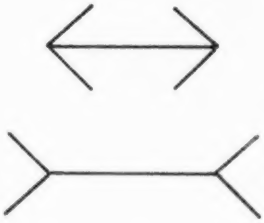
4. Read the story Happy Birthday, Moon by Frank Asch.

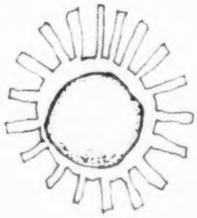
5. Look at and discuss optical illusions such as the following:

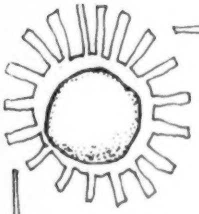
Is it a vase or two faces?



Which line is longer?







Lesson:

The Moon Looks Different at Different Times

(Grade Three)

As this lesson emphasizes language related to science concepts, you may wish to teach it during your Science period.

Science Concepts:

1. The moon appears to change shape during the month.

English Vocabulary **(*actually developed in this lesson)**

* moon
* bigger
* smaller
* yesterday
* today
* full

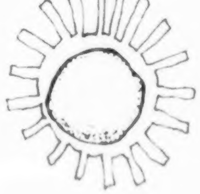
new
crescent
quarter
half
tomorrow

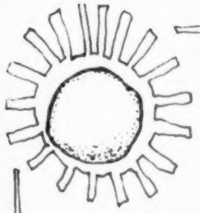
English Sentence Patterns (*actually developed in this lesson)

* Yesterday the moon looked __________ than it does today.
* Today the moon looks __________ than it did yesterday.
* Tomorrow the moon will look __________ than it does today.

Special Materials Required

Pictures showing phases of the moon
Balls
Flashlight
Shoeboxes





Concept Development/Language Exposure

1. Review the concepts of time (yesterday, today, tomorrow) and size (bigger, smaller) with students.

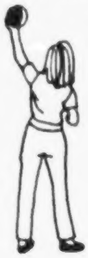
2. a) Ask students to draw pictures of the moon. Compare their pictures: Is the moon the same shape in all of them? Why did some people draw the moon as a circle and others draw it as a crescent shape?

   b) Have students observe the moon every night for a week or two. Record the moon's shape by carefully drawing what was seen on white paper. Cut these shapes out and mount on a strip of black paper. Make sure to date each observation. What is happening? Does the moon seem to be getting bigger or smaller? Use this discussion as an opportunity to model the sentence patterns.

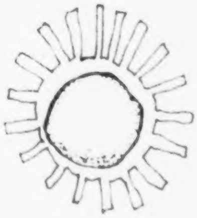
   c) Ask students to think of reasons why the moon looks different at different times. Record all responses. Discuss responses.

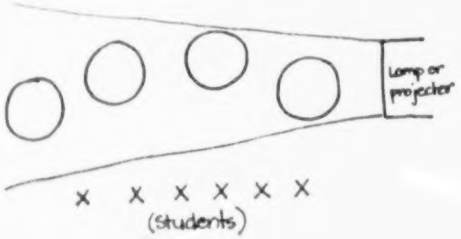
3. Tell students that you are going to do some experiments to see if you can find out why the moon looks different at different times:

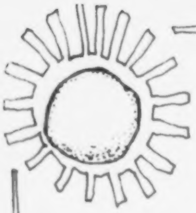
   a) Go outdoors. Provide each student with a white ball (baseball or styrofoam ball). Have students stand in a sunny area and hold the balls at arms length. How much of the balls are in sunlight? How much of the sunlit part can they see? Have them move the balls. Does the amount in sunlight change?



   b) Darken the classroom. Set up a projector so that a beam of light shines across the room in front of the students. Move a large white ball (volleyball) in an arc through the beam of light. Each student will see his/her own phases of the moon.





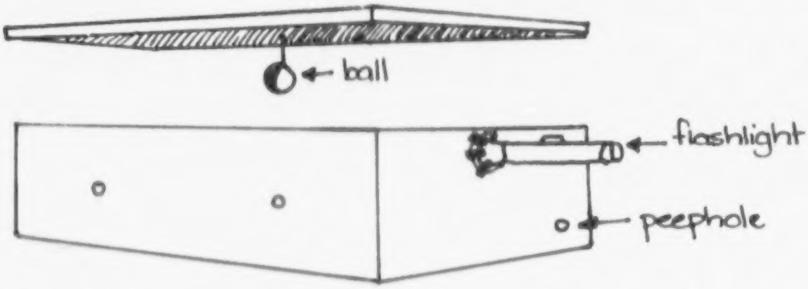


c) Darken the room except for a single light source. Stick a pencil into a styrofoam ball; hold the ball over your head out of your shadow. Have students predict and observe the position that the ball must be in to see: all of its lighted side; none of its lighted side; half of its lighted side.

Imagine that your head is the earth, the ball is the moon and the light source is the sun. Experiment with the model moon to show the phases of the moon. Note the position and shape of the moon as you move it. Does the shape appear to change in the same way every time?

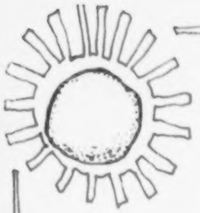
Now, hold the model moon and turn away from the sun. Does the lighted part get smaller or larger? How does it change when you turn toward the sun?

d) Make a moon phase box: Suspend a golf ball or a ping pong ball from the middle of the top of a shoe box. (Use a string and a brass fastener to do this.) Cut an opening in one end of the box so that a flashlight can shine into the box. Cut small viewing holes in all four sides of the box. Turn the flashlight on and observe the ball from each of the four sides of the box. Think of yourself as the observer on earth, the ball as the moon, and the flashlight as the sun. When did you see all of the ball? Half of it? Less than half? More than half?



Discuss the results of these activities: Does the moon actually change shape? What part of the moon do we see? Does the moon always appear to change in the same way?

4. Place pictures of moon phases in the correct sequence. Ask students to identify the shape which looks most like the moon that they observed yesterday. Ask them to predict whether the moon will look bigger or smaller today and tomorrow. Model the sentence patterns.



Language Practice

L 1. True/False: Place the moon cards in sequence on the chalkboard. Point to one card and make a statement about it. Students indicate whether your statement is true or false, for example:

"The moon looks bigger today than it did yesterday."

L 2. Flashlight Game: Place moon cards in sequence. Make a statement. One student attempts to shine the light on a card that matches your statement. The other students decide if s/he is correct.

L/S 3. Parrots: Students pretend to be parrots and repeat what the teacher says. They must only repeat true statements.

S/R 4. Dictation: Refer to the observations that students made during CD#2b). Have them dictate statements which describe how the moon looked the previous day, how it looks today, and how it will look tomorrow. Record the statements on sentence strips and place them in the pocket chart with the corresponding student drawings.

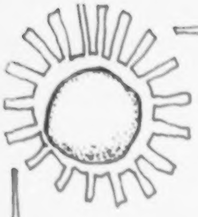
W 5. Moon Log: Have students keep a moon log for a week. Provide them with a worksheet to complete each day. Use the vanishing technique so that by the end of the week, they write most of the statements by themselves. For example:

Day 1 - Yesterday the moon looked __________ than it does today.
Today the moon looks __________ than it did yesterday.
Tomorrow the moon will look __________ than it does today.

Day 2 - Yesterday the _____ looked _____ than it does _____.
Today the _____ looks _____ than it did _____.
Tomorrow the _____ will look _____ than it does _____.
Etc.

Application

1. Keep a Moonwatching Calendar for several months. Observe that the changes we see in the moon occur in a regular pattern. Count the number of days it takes for the new moon to become a full moon. How does this number relate to the number of days in a month? How did the word "month" originate? ("Moonth" --> month.) Learn terms to describe the phases of the moon: new, crescent, quarter, half, full, waxing, waning. Take photographs of the moon in its various phases. Can you ever see the moon and the sun in the sky at the same time? Try to take a photograph showing them together in the sky.



Culminating Activities - Grade Three

1. Theme Notebooks: Have students design their own covers for their Sun, Moon and Earth Notebooks. The notebooks may include poems, descriptions of experiments that students did during the unit, pictures, craft projects, worksheets, etc. that relate to the theme. It is important to allow students to choose what they will put in their notebooks. The notebooks are their personal records which they may take home to share with family and friends.

2. a) Have students interview elders to find out if there are traditional legends about the sun or the moon. Have them record the elders telling the legends. Transcribe these and have students illustrate them.

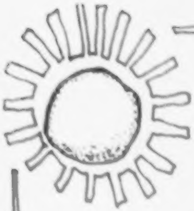
   b) Have students work in small groups to write original "legends" about how the sun and moon came to be. You may wish to brainstorm ideas with the whole class before breaking into smaller groups.

3. Write similes about the sun and the moon, for example:

   The sun is as hot as
   The moon is as round as
   Etc.

4. Interested students may conduct a research project about man's landings on the moon. Have them write letters to NASA asking for information, pictures, etc. The findings may be reported to the rest of the class (or school) in the form of a bulletin board, book, etc.

5. Have students interview elders to find out what the months are called in their aboriginal language. Why are they known by these names? Are there any legends about these?



Evaluation Activities - Grade Three

It is important to assess what you students have learned during this unit. The following activities evaluate language and content. There are additional evaluation ideas and record keeping forms in the booklet Evaluation Guidelines for use with the Science Language Development Units (grades 1, 2, 3).

You can do them orally (in small groups or with individuals) to test listening and speaking or on paper to test reading and writing. These are only suggestions; you can substitute different content or vocabulary items to make them more appropriate for your students. You probably will want to include many other activities as well.

1. Tell or give students sentence beginnings to match to sentence endings.

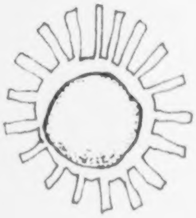
When it is day in Igloolik	it is night in London, England.
When it is day in Hong Kong	it is night in Coppermine.
When it is day in Honolulu	it is night in Peking.
When it is day in Vancouver	it is night in Rome.

Assist students in locating cities on the globe.

2. Tell or give students the beginning of a sentence and a number of possible sentence endings. They indicate which sentence endings are appropriate for the sentence beginnings.

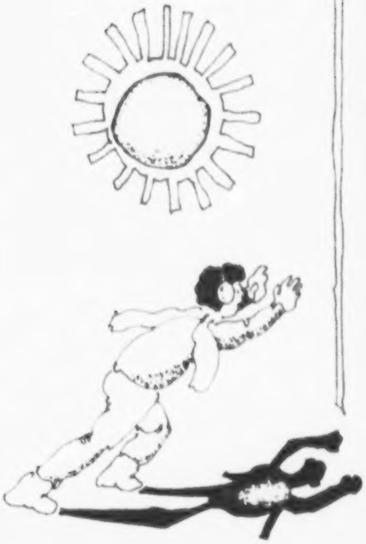
It looks like the sun moves because

a) it turns around the earth.
b) we can't see it at night.
c) the earth turns.
d) the sky moves.



3. Have students demonstrate and explain why we have day and night.

4. Provide students with a set of cards showing the phases of the moon. Have them place the cards in the proper sequence.



POEMS, SONGS AND STORIES

Last Song

James Guthrie
Basil Blackwell Limited
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To the Sun
Who has shone
All day,
To the Moon
Who has gone
Away,
To the milk-white,
Silk-white,
Lily-white Star
A fond goodnight
Wherever you are.

April

Source Unknown

Two little clouds one April day
Went sailing across the sky.
They went so fast that they bumped their heads
And both began to cry.

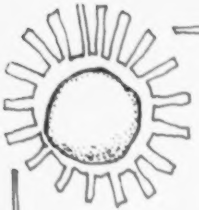
The big round sun came out and said,
"Oh, never mind, my dears,
I'll send all my sunbeams down
To dry your fallen tears."

Early Morning

Hilaire Belloc
Basil Blackwell Limited

The moon on the one hand, the dawn on the other:
The moon is my sister, the dawn is my brother.
The moon on my left hand, the dawn on my right.
My brother, good morning: my sister, good night.

* Substitute "sun" for "dawn"



Oh Mister Moon
Traditional Song

Oh Mister Moon, Moon,
Bright and shiny moon,
Won't you please shine down on me.

Oh Mister Moon, Moon,
Bright and shiny moon,
Hiding behind that tree.

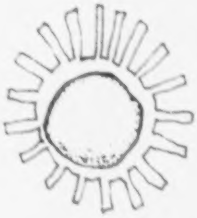
I'd like to stay,
But I've got to run.
There's a new day coming
With the morning sun.

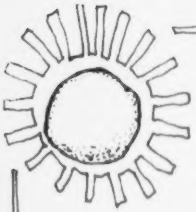
Oh Mister Moon, Moon,
Bright and shiny moon,
Won't you please shine down on me.

The Sun and the Moon
Elaine Laron
Source Unknown

The Sun is filled with shining light
It blazes far and wide
The Moon reflects the sunlight back
But has no light inside.

I think I'd rather be the Sun
That shines so bold and bright
Than be the Moon, that only glows
With someone else's light.





Goodnight, Mr. Beetle

From: Poetry on Wheels
Leland Jacobs
Garrand Publishing Company
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Good night, Mr. Beetle,
Good night, Mr. Fly,
Good night, Mrs. Ladybug,
The moon's in the sky.

Good night, Mr. Robin,
Good night, Mrs. Wren,
Good night, Mr. Sparrow,
It's bedtime again.

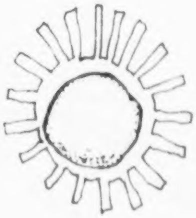
Good night, Mr. Rooster,
Good night, Mrs. Sheep,
Good night, Mr. Horse,
We must all go to sleep.

Good night, Miss Kitten,
Good night, Mr. Pup,
I'll see you in the morning,
When the sun comes up.

The Sun

Pauline Clarke
From Silver Bells and Cockle Shells
Abelard-Schuman Ltd., 1962

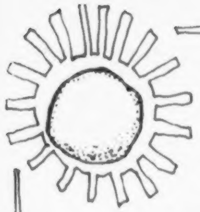
The sun he rises in the East,
He sets him in the West.
Of all the things that shine on earth,
I love the sun the best.



The Moon

Source Unknown

The yellow moon
is high in the sky.
It looks like half
of a lemon pie.
If I were very, very tall
I'd take my fork
And eat it all!



Satellite, Satellite

Eve Merriam
From There Is No Rhyme for Silver
Atheneum Publishers, 1962

Satellite, satellite,
The earth goes around the sun.

Satellite, satellite,
The moon goes around the earth.

Satellite, satellite,
I have a little satellite.

My little brother orbits me
And pesters day and night.

The Sun

Source Unknown

Over there the sun gets up,	(Extend arm horizontally)
And marches all the day.	(Raise arm slowly)
At noon, it stands right overhead;	(Point straight up)
At night, it goes away.	(Lower arm slowly and drop down)

Crayons

From: Rhymes About Us
Marchette Chute
Copyright © 1974. E.P. Dutton & Co., Inc.
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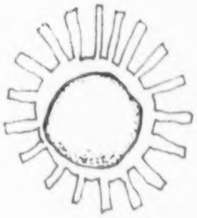
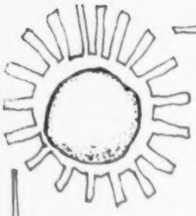
I've coloured a picture with crayons.
I'm not very pleased with the sun.
I'd like it much stronger and brighter
And more like the actual one.
I've tried with the crayon that's yellow,
I've tried with the crayon that's red.
But none of it looks like the sunlight
I carry around in my head.





Good Morning, Clouds

Source Unknown

Good morning, clouds, so fluffy and white.
I watch you dance by dawn's early light.
Good morning, sun, with your great big grin.
Open up the window, please come in.
Good morning, sky. What a pretty blue!
How do you do? I'm fine, too!

The Sun

John Drinkwater
From All About Me
Houghton Mifflin Co.

I told the Sun that I was glad,
I'm sure I don't know why;
Somehow the pleasant way he had
Of shining in the sky,
Just put a notion in my head
That wouldn't it be fun
If, walking on the hill, I said
"I'm happy" to the Sun.

Look

From: All That Sunlight: Poems by Charlotte Zolotow
Charlotte Zolotow
Copyright © 1967, Harper & Row Publishers, Inc.
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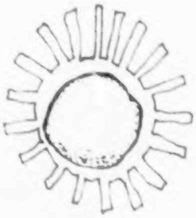
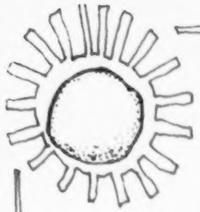
Firelight and shadows
dancing on the wall.
Look at my shadow
TEN FEET TALL!





The Shadow

Walter de la Mare

When the last of gloaming's gone,
When the world is drowned in Night,
Then swims up the great round Moon,
Washing with her borrowed light
Twig, stone, grass-blade - pin-point bright -
Every tiniest thing in sight.

Then on tiptoe,
Off I go!
To a white-washed
Wall near by.

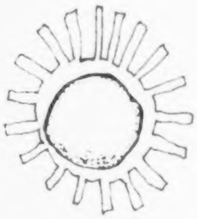
Where, for secret
Company,
My small shadow
Waits for me.

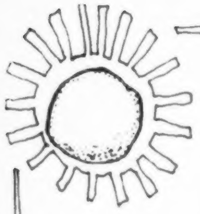
Still and stark,
Or stirring - so,
All I'm doing
He'll do too.

Quieter than
A cat he mocks
My walk, my gestures,
Clothes and locks.

I twist and turn,
I creep, I prowl,
Likewise does he,
The crafty soul,
The Moon for lamp,
And music, owl.

"Sst" I whisper,
"Shadow, come!"
No answer;
He is blind and dumb -
Blind and dumb -
And when I go,
The wall will stand empty,
White as snow.





Shadow Race

From: A Light in the Attic: Poems and Drawings by Shel Silverstein
Shel Silverstein
Copyright © 1981 by Snake Eye Music, Inc.
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Every time I've raced my shadow
When the sun was at my back,
It always ran ahead of me,
Always got the best of me.
But every time I've raced my shadow
When my face was toward the sun,
I won.

Shadow Wash

From: Where the Sidewalk Ends: Poems and Drawings by Shel Silverstein
Copyright © 1974 by Snake Eye Music, Inc.
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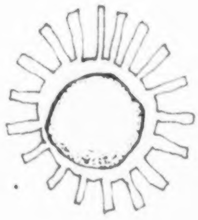
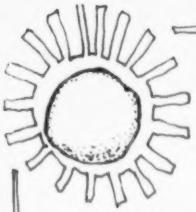
I've never washed my shadow out
In all the time I've had it.
It was absolutely filthy I supposed.
And so today I peeled it off
The wall where it was leaning
And stuck it in the washtub
With the clothes.
I put in soap and bleach and stuff,
I let it soak for hours,
I wrung it out and hung it out to dry,
And whoever would have thunk
That it would have gone and shrunk
For now it's so much
Littler than I.





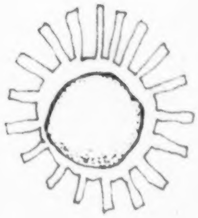
Shadow Dance
Ivy O. Eastwick
Source Unknown

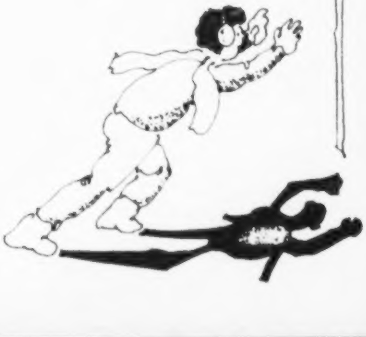
O Shadow
Dear Shadow,
Come, Shadow,
And dance!
On the wall
In the firelight
Let both of
Us prance!
I raise my
Arms, thus!
And you raise
Your arms, so!
And dancing
And leaping
And laughing
We go!
From the wall
To the ceiling,
From ceiling
To wall,
Just you and
I, Shadow,
And none else
At all.

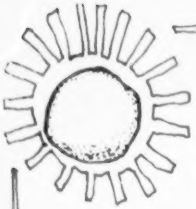
My Shadow
M. Gilmour

I have a little shadow
It follows me all day
It jumps with me and turns with me
Wherever I may play.

Sometimes my shadow
Looks very big and wide
At other times my shadow
Just likes to hide!







Moon Song

Hilda Conkling

Source Unknown

There is a star that runs very fast,
That goes pulling the moon
Through the tops of the poplars.
It is all in silver,
The tall star:
The moon rolls goldenly along
Out of breath --
Mr. Moon, does he make you hurry?

Moon-in-Water

Ivy O. Eastwick

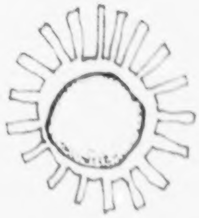
Source Unknown

Three Wise Men of Gotham
thought the Moon was cheese
and tried to fish it out
of the river -- if you please!
but all the little tadpoles
trilled a little tune:
"You'll never, never catch it --
it's the Moon!
Moon!
MOON!"

I See the Moon

Traditional

I see the moon,
And the moon sees me;
God bless the moon,
And God bless me.



Flying

J.M. Westrup
From: A Book of a Thousand Poems
Evans Brothers

I saw the moon,
One windy night,
Flying so fast --
All silvery white --
Over the sky
Like a toy balloon
Loose from its string --
A runaway moon.
The frosty stars
Went racing past,
Chasing her on
Ever so fast.
Then everyone said,
"It's the clouds that fly,
And the stars and the moon
Stand still in the sky."
But I don't mind --
I saw the moon
Sailing away
Like a toy
Balloon.

The Moon's the North Wind's Cooky

From: Collected Poems of Vachel Lindsay
Copyright © 1982. The Macmillan Company, 1914
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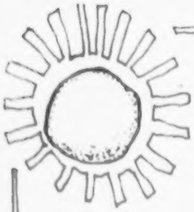
The Moon's the North Wind's cooky.
He bites it, day by day,
Until there's but a rim of scraps
That crumble all away.

The South Wind is a baker.
He kneads clouds in his den,
And bakes a crisp new moon that . . . greedy
North . . . Wind . . . eats . . . again!



Night Comes

From: A Bunch of Poems and Verses
Beatrice Schenk de Regniers
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Night comes
leaking
out of the sky.

Stars come
peeking.

Moon comes
sneaking,
silvery-sly.

Who is
shaking,
shivery-quaking?

Who is afraid
of the night?

Not I.

Moon-Come-Out

From: Eleanor Farjeon Poems for Children
Eleanor Farjeon
J.B. Lippincott Co.
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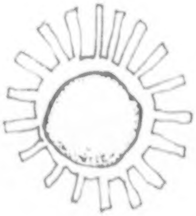
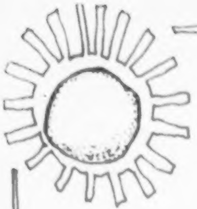
Moon-Come-Out
And Sun-Go-In,
Here's a soft blanket
To cuddle your chin.





Hide-and-Seek Shadow

From: Farther Than Far
Margaret Hillert
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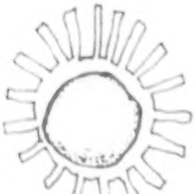
I walked with my shadow,
I ran with my shadow,
I danced with my shadow,
I did.
Then a cloud came over
And the sun went under
And my shadow stopped playing and hid.

Poor Shadow

Ilo Orleans
Source Unknown

Everything has a shadow --
A mountain, a bird or a ball --
Only a poor, poor shadow
Hasn't a shadow at all.



Northwest
Territories Education